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ART. I. *A Lecture on Medical Philosophy, delivered in the College of Physicians and Surgeons, on Monday the sixth of November*, 1827. By J. AUGUSTINE SMITH, M.D. Professor of Anatomy and Physiology in the University of the State of New-York.

[The following Discourse is published partly to correct erroneous impressions of its scope and objects, and partly in the hope that a wider diffusion of the principles which it inculcates will tend to the permanent improvement of Medical Science.—J. A. S.]

GENTLEMEN,

MY name standing first in the numerical order of my colleagues, it has, in consequence, devolved upon me to open the present session of the College. To discharge this duty with propriety, anatomy and physiology, the subjects especially committed to my charge, must be for the time in abeyance. A wider field is to be ranged, and some topic must be selected not less interesting but more comprehensive. Accordingly, I propose to engage you in a discussion sufficiently general and sufficiently important. It is my design to examine into the philosophy which has prevailed, and still

prevails, in medicine—an investigation which, in my opinion, is greatly required. For look first at the records of our science, and see how theory, as these whimsies have been termed, has succeeded theory, each rising and glittering, yet bursting in its turn. Observe, then, the actual condition of the profession, and what a scene does it exhibit to those, who feel what their vocation ought to be—who are aware what it is—and who reflect how large a portion of human happiness depends upon the soundness of medical principles and the correctness of medical practice! Every where are we mortified by frivolous disputes and idle conjectures, assertions which are apocryphal and systems which are false; the whole rendered more humiliating and disgusting by a copious admixture of bad feelings and angry passions. But this never can be right—we must have gone astray—we must have failed to observe those dictates of right reason which, as rules of philosophizing, have conducted other inquirers, with serene tempers and kindly dispositions, to certainty and truth. Here then must be the fault; here must be the source of all our errors, our broils, and our contests. OUR PHILOSOPHY IS WRONG AND REQUIRES TO BE CORRECTED.

To induce and to enable you to make this correction, are the objects of the ensuing discourse. In their pursuit, I shall first give you some idea what philosophy really is; I shall next point out the mistakes with regard to it which have been committed; I shall then show you the evils resulting from those mistakes; and lastly, I shall endeavour to deduce from the principles which shall have been established, the means of permanent improvement to the healing art.

To begin then with our philosophy.

When any occurrence attracts our attention, our curiosity is excited, and we wish to understand it. Now an explanation must be sought in one of three several ways. We must simply generalize the fact, or we must resolve it into another fact of a more comprehensive character, or lastly, we must enumerate in the regular order of succession, the circumstances which precede the event under consideration. In the two first cases, our solutions are complete when we ar-

rive at what are called the Laws of Nature, or more properly ultimate facts; in the last, our analysis is perfected when we ascertain the entire series of phenomena which can alone usher in the one which we are investigating.

Such, gentlemen, is philosophy when reduced to its bare elements, and the propositions which express it in this very abstracted form, would admit of much curious illustration. To indulge in this, however, would be too foreign to our present purpose, and a single example under each head must suffice.

Suppose, then, we wish to know why a stone falls to the ground? The reply is, that all bodies mutually attract, and consequently the earth and the stone acting in this manner on each other, are brought into contact. Here you perceive that a fact which is general has been substituted for one that is particular.

But it may be occasionally observed that bodies, instead of approaching the earth, move in an opposite direction, and we may be desirous of knowing whence this proceeds. To satisfy our curiosity, Natural Philosophy demonstrates that the ascent of bodies which are light, is as much the effect of the attraction of which I have spoken, as the descent of those which are heavy. In this case, then, we have two particular and apparently opposite facts resolved into the more general one of gravitation.

Lastly, we sometimes hear it thunder, and the cause of this may be an object of inquiry. In that event, the same science shows us that there is a fluid called electricity; that this fluid is liable to have its equilibrium disturbed; that when this happens, there is a strong tendency in it to pass from those bodies having an excess, to those in which there is a deficiency, &c. In other words, to account for the noise called thunder, we have to enumerate, in the order in which they occur, all the circumstances which of necessity precede the perception of such a sound by the ear.

Now these various modes of explaining the phenomena of the physical or moral world, and the method of investigation with regard to both is the same, agree in some respects,

though they differ in others. They all agree in proceeding upon facts and nothing but facts; and they further concur in terminating in facts, of which no other account can be given than that such is the will of the Creator.

But there is a marked distinction in the conclusions to which these different processes lead. If we adopt either of the two first, our results are general. If we employ the last, our inquiries, however far they may be pushed, must always end in particulars. By the first two methods, when carried to their utmost limits, we establish, as I have already observed, the Laws of Nature, and to one of these laws it follows as corollary, there can be no exception. For whoever undertakes to announce such a law, does in reality aver that some fact is universally and invariably true. But if it can be shown, in any one instance, that the supposed fact is not universally and invariably true, the statement of course is false, and the law does not exist. Take the law of gravity to which I have before referred as an example. It is expressed in the following words: "that bodies attract each other directly as their masses and inversely as the square of their distances." Now if it can be proved that there is any one body in the universe, with regard to which this rule does not obtain, there is no such thing as the law of gravity.

To apply this to medicine. Suppose a theorist to lay it down as a law of the system, that the cause of fever is an inflammation of the stomach and bowels,* (the gastro-enterite of the French schools) and any one patient can be produced labouring under this disease, in whom no inflammation of the kind exists, there is an end of the proposition as a law. For independently of what I have already stated,

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* It is alleged by the friends of Mons. Broussais, that he does not invariably locate his inflammation in the stomach and duodenum. Exceptions to his general proposition are, I suspect, extremely rare in the mind of Mons. B.; but it will be seen that my argument applies to his rule, however modified, and is equally valid, whatever view of his doctrine may be taken.

it must be for ever borne in mind, what seems never to have occurred to some speculators in medicine, that one breach in the succession of events, provided it be sufficiently established, is as fatal to our notion of cause and effect, as a thousand such failures. What may be the connexion between phenomena, in virtue of which one follows another, it is not necessary for me to inquire, since it is admitted on all hands that invariability of antecedence is absolutely indispensable to the idea of causation. Mere coincidence, therefore, as regards time and place, however frequent, if not perfectly uniform, is to be held fortuitous and not essential. Now that multitudes of cases of fever have occurred where there was no trace of inflammation of the stomach or intestines, or indeed of any other organ, is as certain as dissection, to say nothing of other proofs, can render any negative fact in the world. What then becomes of Mons. Broussais' law?

But to return. The different methods of philosophizing which I have mentioned, have their respective advantages, but they cannot be used indiscriminately. The tendency of the mind is strongly in favour of the second, that is, to refer less general to more general facts. And this, where it can be done with propriety, is commonly the most useful and by far the most gratifying. The discovery, indeed, of a reference of this kind, where the facts are numerous and imposing, and to common observers remote and contradictory, is the most exquisite of all intellectual enjoyments.* No wonder then there should be such a propensity to attempt them. Where however we know and can command all the circumstances upon which any event depends, the event itself is of course under our control, and for practical purposes nothing further can be required. The objection is, that where these antece-

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* The "Ευρηκα! Ευρηκα!" of Archimedes will at once occur to the reader; and I have heard that Dr. Rittenhouse, on one occasion, almost fainted with pleasure at the verification of an astronomical prediction. Every cultivator of science, however, must have felt something of the intense delight which the discovery of truth imparts to the human mind.

dent circumstances are very numerous the mind is unable to retain them, whereas a happy generalization will embrace a whole science in a single theorem. But such generalizations I fear are little to be expected in medicine, and as the effort to introduce them is the besetting sin of the profession, and the daily source of incalculable mischief to the public, I must, if possible, guard you against the error. To do this was, indeed, the primary object which I proposed to myself when I determined to engage in the present inquiry. I shall therefore expatiate upon it somewhat at large, explaining first the difficulties attending all grand and comprehensive doctrines in medicine, showing secondly the abortiveness of all the attempts which have hitherto been made to introduce such doctrines into the profession, and lastly exhibiting the pernicious consequences which these attempts have produced, both to us and to others.

In the first place then, in all cases of general disease the nerves are more or less implicated, and wherever these mysterious agents are brought into action, our philosophy is exceedingly apt to be foiled. So long as we confine our attention to the bones, muscles, and blood-vessels, we *seem* to comprehend something of what is going forward; but the moment the nerves become involved, all our *a priori* reasoning is overthrown, and I have sometimes thought that the rule of *contrary* afforded the best approximation to the truth.

Secondly. The most efficient agents in the production of disorders, are not cognizable by our senses. Miasmata and atmospheric poisons give us no notice of their presence. We see nothing but effects, and these effects undergo the most extraordinary mutations without previous warning in the first instance, or assignable cause in the second.

Thus the general character of the maladies which infest our country is inflammatory, but in 1813–14, this type was, without the slightest premonitory intimation, suddenly reversed, insomuch that bark and wine became in my hands the remedies for ordinary pleurisy. We talk, indeed, under such circumstances, as Sydenham did, "of the constitution of the atmosphere." But this amounts to very little, since in what

that "constitution" consists we have not the slightest conception.

In the third place, the various influences to which we are subjected, are nearly innumerable. Heat, cold, moisture, drought, different kinds of food and of drink, modes of life, places of abode, feelings, passions, &c. &c. All these are constantly operating upon us, and affecting us to a greater or less degree. Hence the inhabitants of cold countries are unlike those of warm. Those who live upon hard and scanty fare, differ from those who are pampered with delicacies. Persons who are secluded and sedentary, are not affected in the same manner with those who are active and exposed, and those who breathe the atmosphere of a crowded city, do not resemble such as inhale the air of the country. In London consequently, and probably in New-York also, stimuli can be used with a freedom which in less populous places would be altogether inadmissible.

Fourthly. There is a principle in all animated beings modifying in a way entirely unknown to us, the action of every agent to which they are exposed, whether remedial or morbific. The existence of such a principle has, indeed, been denied; for in our happy profession, no proposition can be supposed too plain to be contested, (the circulation of the blood has been recently controverted) or too absurd to be maintained. I shall assume, however, that our disorders are sometimes relieved without the intervention of medicine, and as every effect pre-supposes a cause, the power operating in such cases may, I think, be well designated by the phrase, *vis medicatrix naturæ.**

Lastly, every person has a certain individuality about him, physical as well as moral, which constitutes him what he is, and distinguishes him from all others of his race. These idiosyncrasies are what a patient means when he talks of his

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* The term re-action is, indeed, frequently substituted; but this is specific, while the former is generic; they cannot, therefore, be used indifferently.

"constitution"—an expression covering an infinitude of quackery and imposition undoubtedly, but still having a real foundation.

To recapitulate. We have causes then innumerable, imperceptible, and ever varying, operating in the dark, through the instrumentality of agents of whose *modus operandi* we are ignorant—these agents themselves not acting precisely alike in any two individuals, and the whole modified by a power of which little more is known than the name. And yet these multifarious elements sometimes concurring, sometimes conflicting, occasionally one of them enjoying the supremacy and occasionally another, are all to be reduced to one solitary principle. Why, in comparison to simplification like this, the dreams of the alchymists were most hopeful philosophy.

The fate of these fantastic schemes, the second head of our inquiry, will not detain us long. Who hears now of the humoral pathology, or the error loci of one school, the spasm of a second, or the excitement, excitability, &c. of a third? But for our books, it would not be known that such notions had ever existed, although they convulsed, in succession, the medical world. Their oblivion, however, is in perfect accordance with the law which ordains that the promptness and certainty of dissolution are always in proportion to the facility and rapidity of production. For nothing is so easy as to construct what is dignified with the appellation of a Medical Theory. The following is the recipe. Take a fact true in one case at least, if it will hold in half a dozen, so much the better. Extend it to all times, places, seasons, persons, and circumstances. Let it embrace every malady that flesh is heir to; let it comprehend the whole human family, including men, women, and children, of every age, sex, colour, condition, and profession, and you have a theory possessing all the usefulness, truth, and stability which so very wise a proceeding can be supposed to confer.

But perhaps you think I have borne rather hard upon the theorists. It is not so, however, as a slight retrospect will show.

Thus it having been ascertained that our fluids are sometimes contaminated, the humoral pathology sprang into existence, and every thing was to be explained by a depraved state of our juices.

This being soon found insufficient, and it being observed that a constriction of the surface frequently takes place in fever, the spasm of Cullen became the cause of all mischief. This has equally passed away, and, not to be tedious, it has been finally succeeded by inflammation of tissues and surfaces, particularly of the stomach and bowels. Gastro-enteritis is accordingly the hobby of the day, destined, I have no doubt, to run the usual course of brief popularity and final oblivion.

But our countryman, Dr. Rush, the warmth of whose temperament carried him at once to the "ultima thule" of simplification, affords, perhaps, the best exemplification of what I have stated. He convinced himself of having attained, what he denominated, that the felicity of the expression might equal the magnitude of the discovery, THE UNITY OF DISEASE. In the fulness of his heart he communicated the sublime idea to one of his old medical friends and correspondents, who shrewd, sensible, and satirical, observed in reply as he informed me, "that one slight difficulty still remained, one little step was yet to be taken, and if Dr. Rush would only add the *unity of remedy*, the grand consummation would be complete." Unfortunately this was beyond the Doctor's power; and we have now, as formerly, to select as we can, from an abundant materia medica, which the chemists, thanks to their labours, are daily rendering more extensive and more efficient.

We come now to the evils which result from these excessive generalizations.

Of these evils the first and undoubtedly the greatest is, the sacrifice of human comfort and human life which they occasion. This I am aware has been controverted, and it has been contended that our practice has been more consistent and sound than our reasoning. This I believe to be true in part, but in part only. For it was observed of Dr. Cullen

that in the latter stages of fever, he was endeavouring to re-.ax the spasm of his patients instead of supporting their strength. But this is the merest trifle, in my opinion, compared to the mischief inflicted upon mankind by Brunonianism and its opposite, the sytem of depletion. I know it was said by the friends of the great patron of the latter, that with him the doctrine was innoxious, his good sense correcting, at the bed-side of his patients, the folly of his notions, and that in practice Dr. Rush did not push blood-letting beyond other judicious prescribers. That this may have been true of him, I shall not deny. But how did the case stand with the multitude of young and ardent tempers who were annually turned loose upon the public, with imaginations inflamed by the unmerited and extravagant eulogiums of this favourite remedy? What was the price which the community had to pay, before *their* experience and tact could neutralize so dangerous an error?

2ndly. The promulgation of these fanciful speculations is particularly injurious to the junior part of the profession, who eagerly catch at them, and are thus diverted from the real business of their lives. To talk fluently of membranes, surfaces, tissues, and contra-stimulants, the cant phrases of the day, and the legitimate successors of excitement, excitability, state of the system, &c. is very easy, very captivating, very imposing—and very useless. Whereas to collect dry details, to arrange them methodically, and then deduce by patient and continued thought those inferences upon which the lives of their patients are hereafter to depend, have, in the first instance, nothing to allure the buoyant and impatient temperament of youth, always ready to spurn the earth and wing their way in the clouds, but sadly averse to delve where alone I fear the truth is to be found.

A third ill consequence resulting from these whimsies is the effect which they produce, not only upon the intellect, but upon the very senses of those who pursue them. The authors, and too frequently the supporters of a system, not only *believe* as they wish, but what is really wonderful, *perceive*

after the same manner—their minds and their perceptive organs being equally perverted. Accordingly, while such persons see, hear, and credit with the most extraordinary quickness and facility, whatever tends to support their favourite scheme, they have neither eyes, nor ears, nor faith for facts of a contrary description. And hence it is that so many unfounded and conflicting statements get abroad, both in and out of the profession—the multitude seeing, every man through his own glass. Distrust therefore, not the integrity, but the accuracy of all who have peculiar doctrines to maintain : for be assured, that it is by no means unusual for projectors to put forth, with perfect honesty, the most confident assertions which are entirely destitute of truth. Sometimes, however, it is impossible to predicate either truth or falsehood of their propositions—there being no evidence one way or the other. Take Mr. Broussais as an example, and I quote him, not because I think him more culpable than other speculators, but because he happens to be the leading theorist of the day. In the 29th and following sections of his physiology, of which alone I speak, he writes thus : " The ganglionick nerves preside over the interior movements or functions of the viscera which are independent of the brain, they are the grand agents therefore of the living chemistry." " The ganglionick nerves receive and collect the stimulant influence of the cerebral nerves." " The ganglionick nerves avail themselves of the vital force of the animal, for the purposes of this living chemistry." And much more to the same effect, which I need not quote. Now from the calm, serious, and positive tone with which all this is stated, a suspicion of its fallacy would never enter the mind of an ordinary reader. He would take it for granted that every thing was as sound as it is fair, and that Monsieur Broussais was merely applying acknowledged truths to his particular purposes. Yet so far is this from being the case, that in the present state of our knowledge, what Mons. Broussais affirms of the ganglionic nerves, would be equally authentic if asserted of any other of the internal and intangible parts of

the body—so entirely ignorant are we of the real uses of the ganglionic system.*

Before I take my leave of Monsieur Broussais, I may remark, that I do not believe he will ever acquire the distinction and influence which some of his predecessors have enjoyed. I think so for two reasons. In the first place, there is, I am persuaded, less proneness in the profession than there was to be *notional*. But secondly and principally, the aphoristic form in which this gentleman has thought proper to clothe his opinions, though very striking at first, is on the whole disadvantageous. *There is an unfortunate perspicuity about it which is fatal.*† Mysticism, or at least a certain vagueness of expression, is indispensable to error. Where our vision is perfect there can be no deception, whereas a dubious twilight gives ample scope for supposed knowledge and real delusion. Moreover, in the midst of uncertainty every man will interpret to please himself. Proselytes are thus readily obtained, and when once engaged, having to contend at least as much for themselves as their masters, their self-love effectually guarantees their adhesion. And lastly, a disputant intrenched in ambiguity, is invincible; for if driven from one covert, he immediately takes shelter in another, saying, "O that is not what we contend for." And this sort of *bush-fighting* is interminable—no proposition being ever admitted which is sufficiently definite to be battered down. Now the ideas and phraseology of Mr. Broussais wanting this convenient degree of obscurity and confusion, his system as an exclusive one, for doubtless the stomach and bowels are sometimes inflamed, will never, I apprehend, acquire any very great vogue.

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* Majendie has torn out all the accessible ganglia without pain or other perceptible consequence to the animal; the physiology consequently of these bodies is as unknown as the composition of the moon.

† Vide the curious discussion in Campbell's Philosophy of Rhetoric, "Why nonsense so often escapes being detected, both by the writer and the reader."—Philosophy of Rhetoric, Vol. II. p. 112.

Let us revert, however, to the evils of such systems. A fourth is this. Facts which are at one time to account for every thing, are soon found to have been magnified beyond their deserts; they are then neglected and ultimately denied. The spasm of Cullen is too recent to be controverted; it is simply unnoticed, whereas the vitiation of our humours is stoutly contested, although the birth of children covered with the pustules of small-pox demonstrates the fact of our fluids being sometimes contaminated.*

There is one and but one more of the mischievous consequences of these wild speculations with which I shall trouble you. It is of a different character from those which I have already mentioned, and in some respects more injurious.

From the long continuance and almost universal prevalence of loose reasoning and rash generalization in the profession, every thing in medicine is yet unsettled. We have no elementary principles in which all are agreed, and we have consesequently no conclusions to which all will assent. Whatever approaches to *system*, is in a state of perpetual change and revolution. In matters of detail, indeed, it is otherwise. New facts are observed, and new remedies are added, so that our practice undoubtedly improves, and improves greatly; but beyond this, as to any thing which in legitimate language can be called *theory*, I am not aware there is any material amendment. Those who will theorize, as they term it, tread the same ceaseless round of premises which, if not false, are narrow, and of deductions which, if not altogether unwarranted, are pushed far beyond the truth. But this cycle of error alone proves there is something radically wrong. The toil of thousands, if well directed, must have made some advances. Yet in upwards of twenty centuries, in spite of every thing which numbers, zeal, learning, and talents could effect, how little, how very

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* Mr. Abernethy says, that this does not happen earlier than the sixth month of fœtal life. From this it would appear that at this period the communication between mother and offspring becomes more free.

little has been gained from the terra incognita of systematic medicine? A similar result in the labours of those most ingenious personages the schoolmen, is well known to have convinced Lord Bacon that their philosophy was false. Would that another Bacon might arise, from the same premises deduce the same conclusion, and then regenerate the science of medicine, giving us certainty in our principles, uniformity in our practice, and permanence in our systems!

Upon the effects of so delightful a change, could it be accomplished, it is not my object to descant. But there is one benefit that would ensue upon which, as being less obvious, I will offer a few remarks.

The irritability and querulousness of the profession are proverbial and most lamentable. At all times and in all places has it been rent by discord, and divided into parties, sects, and schools. Let half a dozen medical men be required to give their professional opinions to the public, and they certainly disagree about their facts, and almost as certainly fall to calling each other hard names. But assertions, contradictions, and criminations, however well calculated to excite derision and contempt for the parties concerned, do nothing towards the elucidation of the truth. The *Doctors* are therefore very properly set aside, and the matter is disposed of as common sense seems to dictate. That my picture is not overcharged, every one conversant with medical history knows, and those who wish for further information, that I *may not come too near home for examples*, are referred to the discussions which took place in England on the quarantine laws, and the testimony in what is called the Gardner peerage case.

Now this irritability of the profession proceeds in a very great degree, if not exclusively, from the vacillating and dubious state of its principles. Accordingly among those who cultivate the exact sciences, little or nothing of the kind is observable. Among them the certainty which attends every step produces calmness and equanimity, or should a difference of opinion arise, it is settled at once without difficulty or animosity by an appeal to data universally admitted to be

true. In medicine all this is reversed. Nothing being determined or fixed, every one is at liberty to construct a system according to his own fancy; and as no employment is more delectable to minds of a certain, and by no means uncommon description than castle-building in all its varieties, these aerial structures of course abound.* Unfortunately, however, *exclusiveness* is the very essence of such schemes, and projectors, like other potentates, "can bear no rival near the throne." Contests and collisions therefore between the parties are unavoidable; and all being equally ready for defence or attack, and alike unprovided with authenticated facts to support themselves or confute their opponents, they are compelled to dismiss reason and logic, and then of course have to rely upon the poor weapons which petulance and passion can supply. The consequences may be readily imagined, and have indeed already been detailed. Let us endeavour then to correct our philosophy, that our manners as well as our minds may be benefited by the reformation.

I have thus, gentlemen, laid before you the deplorable effects of this rash spirit of generalization which has so greatly infested the profession, and which with its consequences, constitutes the true and only opprobrium medicorum.† But be-

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* These *day-dreams*, while they tickle most agreeably the imagination, constitute no tax upon the mind in the way of labour or thought. Were they only as harmless to others as they are pleasant to the individual, the philosopher would smile, but never think of awakening the dreamer.

† Notwithstanding the blot mentioned in the text, the medical escutcheon is one of which any member of the profession may justly be proud. Engaged in the discovery of truth, and in its application to the relief of human suffering, constantly associated with females who constitute much the better portion of the community, and who are then in the situation best calculated for the display and exercise of their virtues, the intellect and the feelings of the physician are equally exposed to the most benign influences. And hence, I presume, it has happened that of those who *mingle much with the world*, a species of contact extremely apt to leave a soil behind it, the best moral exemplars whom I have ever seen have been medical men.

fore I take my leave of this part of my subject, there are two remarks which I have to make. In the first place I must caution you against supposing that I wish to condemn in the gross the eminent men whose names I have had occasion to mention. So far from this, I willingly acknowledge that they were endowed with great talents, and I further concede, that they were the authors of much good. But with this good was mingled no small portion of evil; and it is to guard you against the one, while you take advantage of the other that I now address you.

My second observation is this. The opinions which I have now expressed are by no means the hasty conceptions of the moment, dressed up for the occasion. On the contrary, they were my settled convictions long before I could trace and methodise them as I have now done. They arose, indeed, while I was yet a student; and as facts, which produced so deep and permanent an impression upon me, may not be without their influence upon you, I will state the occurrences to which I allude.

When I began the study of medicine, the doctrines of Dr. Rush were all the fashion, and like other young men, I imbibed them fully. Thus impressed I went to London, and walking through the wards of St. Thomas' Hospital not long after my arrival, I saw a patient with a full bounding pulse in a high state of erysipelatous inflammation. Here then was a case requiring, according to my theory, copious blood-letting and other depletions. Yet when I asked the nurse what the man was taking, "Bark," was the reply: *Bark*, said I, and how often? "Every three hours." And in what form? "Powder, tincture, and infusion, the mode in which we use it." You may easily imagine my astonishment. In forty-eight hours I observed to myself, this poor man will be dead. Next day I stopped to see how he was, found to my astonishment that his pulse had subsided under the use of these stimulants, and that he was better. In a few days he was discharged cured. Fact and hypothesis, you thus perceive, were brought fairly to issue, and with a sigh I have no doubt, although I do not now recollect it, the latter was obliged to yield. Had the

bantling been my own, instead of having been adopted, the result might have been different. As it was, however, I abandoned my much cherished notions. But I soon found that I was not alone in error—the medical officers of the institution pushing their doctrine as far into one extreme as I had gone in the other. A man broke his leg, and was attacked in consequence with erysipelas: they gave him bark, and in two days he was a corpse.

Conversing on this subject a few years ago with the most eminent member of the profession in our country, I stated the circumstances which I have just mentioned. "Why," said he, "something of the same kind occurred to myself while a student. Going warm from my books with my head filled with Cullen's fine description of a paroxysm of fever, I found a man labouring under a severe attack of it. 'So, my friend,' said I to him, 'you first began to feel sluggish, then cold, and so on.' 'No indeed,' replied the man, 'I felt no such thing. I was never better in my life, when all at once I began to burn, and have been as hot as fire ever since.' I was," he continued, "as much disconcerted as yourself, and became immediately aware that all was not right." That all is not right is certain, and it only remains to render that so which has heretofore been wrong. But on this point I shall be exceedingly brief, as nothing could be more absurd than an attempt to point out new modes of arriving at truth. They are already sufficiently well known; the difficulty being here, as in cases of more importance, not to see, but to follow the straight and narrow path.

Facts, as I have before stated, are the basis of all philosophy; and to ascertain these, is of course the first great object. Now there are four methods by which this can be done—observation, experiment, calculation, and deduction. Of these, calculation is excluded from medicine: we must content ourselves, therefore, with the other three. Of these, the first and second are by far the most important. But experiments, from the peculiar circumstances of the profession, should be attempted with more reserve and caution than I fear are frequently practised. In hydrophobia, tetanus, hydrocephalus, and other equally intractable disorders, the administration of

novel and hazardous remedies, provided they hold out a glimpse of hope, is both justifiable and commendable. But as a disease becomes controllable, whether we consider the time in which it can be cured or the ease and certainty with which this can be effected, we are to abstain from tampering with the life or comfort of a patient.

With regard to *inferring conclusions*, whether general or particular, if what I have said do not teach you prudence and circumspection, it were useless to add any thing further. Let me remind you, however, that the reverse of error does not constitute truth. The golden rule of Aristotle, and a most golden one it is, enjoins upon us that virtue is equally removed from ALL extremes. Do not, therefore, in your anxiety to avoid vain and pernicious speculations, become downright empirics—a mistake infinitely less dangerous no doubt and unfrequent than the other, but still a mistake, and therefore to be avoided. I must add, however, that when we observe the manner in which medical investigations have been conducted, and the evils which have thence ensued to the profession and the public, a little extra horror of hypothetical reasoning is, in my opinion, by no means to be censured. Reasoning of this description, be it remembered, even when well founded, and according to Dr. Fordyce it is in every case a million to one that it is false,* is by no means indispensable to the melioration of the healing art. He who should discover a remedy for tubercular consumption, would be quite as great a benefactor to humanity as he who should generalize, with success, the phenomena of fever. Simplification is doubtless desirable, but extension is more so, and these two improvements by no means and of necessity go on pari passu. In astronomy, indeed, this has been remarkably the case. For supposing the heavenly bodies once put into motion, every thing can be traced to the single fact of mutual attraction. But this is a peculiarity in the sublimest of the physical sciences, and admits of no parallel. In chemistry, on the other hand, the most progressive of philosophi-

* He argued thus. On every subject a million of hypotheses may be formed—therefore, it is a million to one against any one hypothesis.

cal pursuits, the reverse has been the fact—the complexity of the science having increased in a full ratio with its utility and importance. The ancients were contented with four elements. These have been discarded altogether, and in place of them we have now fifty, and may hereafter have fifty more. Now a living body may be esteemed a chemical apparatus, exceedingly curious and complicated, and possessed, moreover, of a power to which in mere chemistry there is nothing analogous. Common sense, therefore, seems to me to teach us, that the operations of such a machine must be proportionally involved, and that consequently, any violent simplification of them is necessarily false.

What can be alleged then under this head, may be summed up in a single sentence. It is our business "to observe well, to observe long, and to observe all;" to experiment when allowable with care and accuracy, and from facts thus ascertained, deduce the principles which they warrant.

I have thus I hope, gentlemen, satisfied you of the truth of the propositions which I undertook to establish, "that our philosophy is wrong, and that it requires to be corrected." And I hope you are further convinced, that all attempts at extensive generalizations in medicine are premature, and at this time injurious, and consequently, that for the present at least, we must content ourselves with the third mode of philosophizing which I have mentioned. In other words, that it is for us to detect the *special* causes of disease and to control them and their effects, so far as it may be in our power. And as to the general laws which regulate the operations of the human system, whether morbid or healthy, since no intellect on earth can now detect them, they are to be reserved for one of those superior geniuses, *who, born at a lucky moment,* are destined to shed light and lustre upon the world.

Such, gentlemen, are the conclusions to which we have arrived, and on which I wish your minds finally to rest. But clear as I trust our results are in the abstract, how far they are likely to be adopted in practice, is a question which I almost fear to ask myself. *Our very nature is against them.* Useless silly conjectures, therefore, and vain aspirations after splendid theories, although they degrade the profession, and what is

immeasurably worse, although they sacrifice our patients at the altar of our follies, are still too deeply rooted in our dispositions to be readily abandoned. For thus it ever is with the sons of Adam. Prone to evil and averse to improvement, the effort to reform them is of all human undertakings the most forlorn. With the old and the bigoted, the task is absolutely hopeless. But with you, whose minds have yet rereceived no particular taint, and whose only object is advancement in the cause in which you are engaged, the prospect is better. Upon *you* some effect may be produced, and from you, consequently, my colleagues and myself may derive the highest reward which teachers of medicine can ever attain—that their pupils at the close of a long and successful professional career, should look back with pride and satisfaction upon THE LESSONS WHICH THEY IMBIBED FROM THE PRECEPTORS OF THEIR YOUTH.

ART. II. *An Account of some of the Lunatic Asylums in the United States.* By T. ROMEYN BECK, M.D. Professor of Medical Jurisprudence in the University of the State of New-York.

INSANITY, with its causes, its increase and its treatment, is a subject of deep interest to every civilized community. Its peculiar but melancholy characteristic, which forbids any reasonable hope of cure, unless the diseased subject is removed from his home and relatives, imposes the duty on governments of providing for its proper management, both as to safe-keeping and as to the means of recovery. That the legislators of this country and its inhabitants have not been unmindful of this obligation, we shall endeavour to show in the course of the present article.

We shall first notice the Lunatic Asylum of this state.

The "*Society of the New-York Hospital*" was incorporated in 1771; and by the liberality of domestic contributors, the legislature of the province, and contributors in England, sufficient funds were obtained for the erection of a proper building. This was proceeded in with great spirit, but in Feb. 1775, when it was almost completed, it accidently took fire and was nearly consumed.

"By this misfortune, the society suffered a loss of seven thousand pounds; and the execution of their benevolent plan would have been wholly suspended, had not the legislature in March 1775, generously granted them the sum of £4,000 towards rebuilding the house and repairing the loss they had sustained. But the war between Great Britain and the colonies, which took place in the same year, prevented the completion of the edifice. During the war, the house was occupied by British and Hessian soldiers, as *barracks*, and occasionally as an hospital."

The effects of the war and the general derangement of the affairs of our citizens, prevented any attention to the institution, and it was not until the 3d of January 1791, that the house was in a proper condition to receive patients, when eighteen were admitted.

From that time to the present, the munificence of the legislature to this institution has been liberal and unwearied—increasing with the increase of the patients, and the enlightened improvements of its governors. On some future occasion, we may notice the History of the Hospital in detail—at present we have stated the above facts only in reference to the subject before us.

As there existed no institution in the state for the reception and cure of *lunatics*, the governors were induced to appropriate apartments in the hospital for patients of that description. The building, however, not being designed for such a purpose, the accommodations were found to be extremely inconvenient and inadequate; and as the applications for the admission of lunatics constantly increased, it was resolved in 1806, if the legislature would lend its aid for that purpose, to erect a separate building, to be exclusively appropriated to the reception of that unfortunate class of beings.

The application proved successful. A building, denominated the "LUNATIC ASYLUM," was immediately erected in the vicinity of the hospital. This edifice contained 64 rooms, and could accommodate about 70 or 75 patients. It was opened on the 15th of July 1808, under the medical superintendence of Archibald Bruce, M.D.

By an act of the legislature the proper officers in a city or county may contract with the governors of the hospital, for the care and maintenance of any pauper lunatic under their respective jurisdictions, and accordingly many have, from time to time, been sent to it from various parts of the state.

The "Asylum" continued to be the only public institution in this state for the reception of lunatics, until the year 1821, when the "BLOOMINGDALE ASYLUM" was completed. The history of this we shall hereafter notice.

Dr. Bruce continued physician until 1817, when Dr. William Handy was appointed. He was succeeded in 1819 by Dr. John Nielson.

We now proceed to give a detailed account of the numbers admitted and discharged.

	ADMITTED.			DISCHARGED.					
Time.	*Remaining of former years.*	*Admitted.*	*Total.*	*Recovered.*	*Relieved.*	Discharged from various causes, as request or eloped, &c.	*Incurable.*	*Died.*	*Remaining at the end of year.*
From Ja. 31, 1795 to Dec. 31, 1803		215	215	108	45	35	—	16	11
1804	11	46	57	22	5	12	—	3	15
1805	15	60	75	30	4	13	—	8	20
1806	20	68	88	29	—	31	—	7	21
1807	21	47	68	18	3	19	—	4	24
1808	24	66	90	16	10	16	—	4	44
1809	44	80	124	22	4	48	—	8	42
1810	42	91	133	44	7	16	—	10	56
1811	56	108	164	67	9	14	3	19	52
1812	52	127	179	64	14	25	1	11	64
1813	64	105	169	47	19	27	—	6	70
1814	70	104	174	23	39	14	7	9	82
1815	82	69	151	27	27	14	—	9	74
1816	74	49	123	14	10	18	—	5	76
1817	76	49	125	6	6	34	—	7	72
1818	72	75	147	45	14	13	—	5	70
1819	70	78	148	44	9	24	—	7	64
1820	64	87	151	48	15	17	—	10	61
1821 to July 21st.	61	60	121	26	1	37	—	5	52
		1584		700	241	427	11	153	

Admitted from Jan. 31, 1795, to July 21, 1821,		1584
Discharged, Recovered, - - - -	700	
Relieved, - - - -	241	
Discharged, from various causes, as request or eloped, - -	437	
Incurable, - - - -	11	
Died, - - - - -	153	
Transferred to the Bloomingdale Asylum, July 21, 1821, - - - -	52*	
		1584

Causes.—These are not given in the printed reports, with the single exception, that for some years the cases originating in intemperance are mentioned. Thus in

1814	there were 17	from that cause,
1815	9	
1816	4	
1817	5	
1818	27	
1819	26	
1820	27	
1821	32	(13 males and 19 females.)

Total for eight years 147 out of about 670 cases, or upwards of one fourth of the whole number.

The immediate cause of death is also mentioned in ten annual reports, viz. from 1811 to 1820 inclusive.

The whole number of deaths for that period was,		88
Of these there died of Mania, - - -	24	
Mania and Paralysis,	1	
Apoplexy, - -	12	
Phrenitis, - -	2	
Epilepsy, - -	3	
Palsy, - - -	4	
Convulsions, - -	1	

* We can find no trace of these "52" in the records of the Bloomingdale Asylum. They are not accounted for, as will be seen, in the reports of that institution.

Dysentery, - -	5
Diarrhœa, - -	4
Consumption, - -	14
Pneumonia Typhodes,	1
Marasmus, - -	5
Decay, - - -	1
Debility, - - -	1
Abscess, - - -	1
Gangrene, - -	2
Scirrhous Liver, -	1
Syphilis, - - -	2
Typhus, - - -	4—88

" In consequence of a communication made to the governors, in April 1815, by Thomas Eddy, stating the advantages that might be produced, by introducing a course of moral treatment for the lunatic patients, more extensive than had hitherto been practised in this country, and similar to that pursued at the " Retreat," near York in England, and proposing that a number of acres of ground near the city should be purchased, and suitable buildings erected for the purpose, a committee was appointed to consider of the plan proposed, and to report their opinion thereon. This committee, having approved of the plan and recommended its adoption, the governors resolved to carry it into effect, if they could obtain the aid of the legislature. Application having been made for that purpose, an act was passed on the 17th April 1816, granting to the hospital the yearly sum of $10,000 until the year 1857, to enable the governors to erect further and more extensive accommodations for insane patients." Grounds to the amount of 77 acres and lying on the Bloomingdale road, about seven miles from the city, were purchased, and here the corner stone of a building was laid on the 7th of May 1818. It was completed in 1821.

The building is of stone, three stories high, and contains accommodations for about 200 patients. The land attached to it is laid out in walks and gardens, and when the weather will permit, the patients are allowed to walk abroad, accompanied by the superintendant or one of the keepers. Tame

animals have also been procured for their amusement, and innocent diversions are permitted: they are allowed to dine in classes, while religious instruction is from time to time imparted to those who appear able to profit by it.

Dr. John Nielson has been the physician of the BLOOMINGDALE ASYLUM since its opening. There is also a physician resident at the institution, while a sub-committee of governors visit it every week, and a standing committee every month.*

The following details are taken from the annual reports.

ADMITTED.

Time.	*Males.*	*Females.*	*Total.*
From July 27, 1821 to Dec. 31, 1821	75	48	123
1822	66	36	102
1823	83	48	131
1824	77	44	121
1825	102	54	156
1826	97	45	142
1827	107	27	134
	607	302	909

DISCHARGED.

	Recovered.	*Much Improved.*	*Improved.*	*Relieved.*	*By request.*	*Improper objects.*	*Eloped.*	*Died.*	*Unimproved.*
Part of 1821	19	—	—	7	9	3	—	2	—
1822	48	10	12	—	—	—	1	5	18
1823	55	13	20	—	—	—	6	5	14
1824	48	15	12	—	22	—	8	11	—
1825	71	19	23	—	63	—	—	3	—
1826	69	7	11	—	42	—	2	11	—
1827	67	9	17	—	34	—	4	9	—
	377	73	95	7	170	3	21	46	32

* Annual Report of the Governors for 1821.

The numbers to the end of the year 1827, will stand thus.

ADMITTED,

From the 27th July 1821 to the 31st Dec. 1827, 909

DISCHARGED,

Recovered, - - - -	377
Much improved, - - -	73
Improved or relieved, - -	102
Discharged by request, - -	170
Improper objects or eloped, -	24
Unimproved, - - -	32
Died, - - - - -	46
Remaining Dec. 31, 1827, -	85
	909

SPECIES OF INSANITY.—There is considerable variety in the arrangement of the species of insanity. We shall state them as given in each report.

	Mania.	*Monomania.*	*Melancholia.*	*Dementia.*	*Imbecility, adventitious.*	*Imbecility, habitual.*	*Idiocy.*	*Hemiplegia.*	*Hypochondriasis.*	*Mania a potu.*	*Furious and melancholy.*	*Fatuous.*	*Imbecile.*	*Total.*
1822	42	—	7	4	—	—	7	1	4	37	—	—	—	102
1823	55	—	21	18	2	14	—	2	—	19	—	—	—	131
1824	42	20	—	17	—	—	2	—	—	40	—	—	—	121
1825	57	36	—	20	—	—	—	—	—	43	—	—	—	156
1826	63	28	—	15	—	—	1	—	—	35	—	—	—	142
1827	82	19	—	—	—	—	—	—	—	—	7	13	13	134
	341	103	28	74	2	14	10	3	4	174	7	13	13	786

Causes.—These are given in detail for one year only, viz. 1826; of 142 cases, there arose from

Bodily disease, - - - - - -	84
Organic affection of the brain, original or acquired,	4
Hereditary, - - - - - -	6
Primarily moral, - - - - -	36
Unknown, - - - - - - -	13

In 1822, 33 cases were from intemperance.

1823, 22 from do.

In the reports, the old and recent cases are distinguished from each other. We are not able, however, to make the ensuing tables perfectly complete, in consequence of the deaths or elopements not being in all cases referred to one or the other. They are generally added, without reference to the length of the illness.

OLD CASES.

ADMITTED.		DISCHARGED.				
Time.	*Numbers.*	*Recovered.*	*Much Improved.*	*Improved.*	*Request.*	*Unimproved.*
Remaining of 1821	65					
1822	29	4	—	6	—	8
1823	58	18	7	13	—	10
1824	70	27	6	9	13	—
1825	67	20	7	15	47	—
1826	49	1	1	4	—	31
1827	42	2	1	3	28	—
	380	72	22	50	88	49

Total, - - - - - - 281
Remaining Dec. 31, 1827, - - 70
——351

RECENT CASES.

ADMITTED.		DISCHARGED.				
Time.	*Numbers.*	*Recovered.*	*Much Improved.*	*Improved.*	*Unimproved.*	*Request.*
Remaining of 1821	18					
1822	73	44	10	6	10	—
1823	73	37	6	7	4	—
1824	51	21	9	3	—	9
1825	89	51	12	8	—	16
1826	93	68	6	7	—	11
1827	92	65	8	14	—	6
	489	286	51	45	14	42

Total, - - - - - - 438
Remaining Dec. 31, 1827, - 15
——453

If to the Old Cases discharged 351
and Recent Cases discharged 453, we add
Deaths, - - - 44
Eloped, - - - 21
——869

We shall have the amount equal to those admitted,
viz. Old Cases - - - 380
Recent Cases - - 489
——869

The proportion of each sex recovered, is given as follows:

	MALES.	FEMALES.		
1822	38	10		
1823	37	18		
1824	41	7		
1825	57	14		
1826	50	19		
1827	53	14		
	276	82	Total,	358
recovered during part of 1821,				19
				377*

The CONNECTICUT ASYLUM was founded through the combined liberality of the legislature and the citizens of the state. It is situated in the city of Hartford; and judging from the engraving prefixed to the third report, the buildings must be large and spacious, and combine all the comforts of a New-England country residence. It was opened on the first of April 1824, under the medical superintendence of Eli Todd, M.D. This gentleman we have heard spoken of by those who know him,

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* The following authorities have been used in preparing the above. *An Account of the New-York Hospital*, 8vo. New-York, 1811.—*The Same*, 8vo. New-York, 1820.—*Annual Reports of the Governors of the New-York Hospital to the Legislature from* 1802 *to* 1827. (Journals of the Senate and Assembly for the respective years.)—*Reports of the Bloomingdale Asylum for* 1822, 1823, 1824, 1825, 1826, 1827.

as one of the first medical men in his native state; and his success, as we shall hereafter show, is a most satisfactory proof that his qualifications have not been overrated.

A remark made in the first report strikingly illustrates the value and indeed necessity of establishing lunatic asylums. Many, it is observed, whom it was found necessary, when at home, to confine in chains, became uniformly, in a few days after their admission, orderly and inoffensive, and needed little or no restraint.

The following extract from the report of the visiting physicians, dated May 11, 1827, will enable our readers to judge concerning the mode of treatment pursued in this establishment.

"In respect to the moral and intellectual treatment, the first business of the physician, on the admission of a patient, is, to gain his entire confidence. With this view, he is treated with the greatest kindness, however violent his conduct may be,—is allowed all the liberty which his case admits of, and is made to understand, if he is still capable of reflection, that so far from having arrived at a mad-house, where he is to be confined, he has come to a pleasant and peaceful residence, where all kindness and attention will be shown him, and where every means will be employed for the recovery of his health. In case coercion and confinement become necessary, it is impressed upon his mind, that this is not done for the purpose of punishment, but for his own safety and that of his keepers. In no case is deception on the patient employed or allowed—on the contrary, the greatest frankness, as well as kindness, forms a part of the moral treatment. His case is explained to him, and he is made to understand, as far as possible, the reasons why the treatment to which he is subjected has become necessary.

"By this course of intellectual management, it has been found as a matter of experience at our Institution, that patients, who had always been raving when confined without being told the reason, and refractory, when commanded instead of being entreated, soon became peaceable and docile.

"This kind of treatment of course does not apply to idiots, or those labouring under low grades of mental imbecility, but it is applicable to every other class of mental diseases, whether maniacal or melancholic.

"In respect to the medical and dietetic treatment, it also varies essentially in the main, from the course adopted at other hospitals. Formerly patients labouring under mental diseases were largely medicated, chiefly by emetics, cathartics, and bleeding. At the present time this mode of treatment has given place to intellectual and dietetic regimen, in most

European hospitals. The physician of our Institution has introduced a course of practice, differing from both these, but partaking more or less of each. He combines moral and medical treatment founded upon the principles of mental philosophy and physiology. In one class of cases moral, and in another medical treatment, become the paramount remedies, but in each class of cases, both are combined."

We proceed to an analysis of the cases reported.

Number admitted and Sex.

		Males.	Females.	Total.
1st Year,	from April 1, 1824, to April 1, 1825, -	33	12	44
3rd Year,	from April 1, 1826, to April 1, 1827, -	22	15	37

	10 to 20	20 to 30	30 to 40	40 to 50	50 to 60	60 to 70	70 to 80	*Total.*
1st Year,	—	11	11	12	8	1	1	44
3rd Year,	4	17	5	5	4	2	—	37

Species of Insanity.

	1st. Year.	2d. Year.	3rd. Year.
Mania, - - - -	25		24
Melancholia, - -	10		9
Idiotism, - - -	5		—
Hypochondriasis, - -	2		1
Delirium Tremens,* -	2		3
Total,	44		37

* In the first report, two cases are classified under the name of Delirium *Vigilans*, but as they both originated in intemperance, we have arranged them under the more common appellation of D. Tremens.

Causes.—Of 76 cases, (excluding 5 of idiotism) the causes are given as follows.

Hereditary,	6
Congenital,	1
Constitutional predisposition,	2
Intemperance,	14
Excessive study,	3
Disappointment in business,	3
Disappointed affection,	2
Grief,	5
Religious excitement or despondency,	5
Domestic troubles,	1
Austerity of parental government,	2
Agitation on the near approach of matrimony,	1
Puerperal,	3
Blow on the head,	1
Bodily disease,	6
Excessive venereal indulgence,	1
Long continued typhus fever,	1
Mental and bodily fatigue under a tropical sun,	1
Derangement of digestive functions,	2
Unknown,	16

Results of Treatment.—The cases admitted are divided into recent and chronic. By the former, is understood those whose duration does not exceed one year; while under the latter, are arranged all those in whom the disease has been more prolonged. Thus of 32 chronic cases admitted during the first year, 12 had been insane from one to five years, 8 from five to ten, 6 from ten to fifteen, and 6 from fifteen to twenty. In this number also were included five in a state of helpless idiotism, and 6 in a state of mental decrepitude, admitting neither employment or recovery.

The cases may be arranged as follows.

	Recent.	Chronic.
Admitted 1st Year,	12	32
Remaining of 2d Year,	5	20
Admitted 3rd Year,	23	14
	—40	—66

RECENT CASES.

	DISCHARGED.				REMAINING.				TOTAL.
	Recovered.	*Much Improved.*	*Unimproved.*	*Total.*	*Recovered.*	*Convalescing.*	*Improved.*	*Stationary.*	*Total.*	
1st Year,	5	2	1	8	1	2	1	—	4	12
3d Year including those remaining of 2d year,	25	1	—	26	—	1	—	1	2	28

CHRONIC CASES.

	DISCHARGED.					REMAINING.				TOTAL.
	Recovered.	*Much Improved.*	*Improved.*	*Unimproved.*	*Died.*	*Total.*	*Much Improved.*	*Improved.*	*Stationary.*	*Total.*	
1st Year,	—	7	3	1	1	12	6	5	9	20	32
3d Year, as above,	4	5	5	4	—	18	1	2	13	16	34

The success attending the treatment of the recent cases, is deserving of special attention. "During the last year, (say the medical visiting committee,) there have been admitted twenty-three recent cases, of which twenty-one have recovered; a number equivalent to 91.3-10 per cent.* The whole number of recent cases in the institution during the year, was 28, of which, 25 have recovered, equal to 89·2-10 per cent.

* In another place it is mentioned, that the twenty-second case is convalescent, with every prospect of rapid recovery.

"At two of the most ancient and celebrated institutions of the same kind in Great Britain, the per centage of recent cases cured, has been from 34 to 54. In our own country, at two highly respectable institutions, the recent cases cured have amounted to from 25 to 51 per cent."

With respect to the chronic cases, Dr. Todd remarks, "that the Connecticut Retreat is opened with a broader latitude of admission than is common to other institutions."

"The far-famed Retreat at York in England, professedly devoted to similar objects, admits no idiots, nor maniacal cases reduced to low grades of mental dilapidation. Of the thirty-four chronic cases stated in the present report, nineteen are of the identical description which would have been excluded by the practice of that excellent institution. The remaining fifteen cases on the list, constituted the whole amount in that class, who were properly within the scope of curative treatment, and of this number, only a few were allowed to remain with us through the requisite term of trial prescribed, in such instances, by most other institutions. Six months' residence in the Retreat, has been thought by many who have placed their diseased friends in the Institution, to be a liberal allowance of time for deciding the question of recovery, in cases of 10 years' duration. As if the chaos of illusions, teeming for years in a distempered imagination, and revived with innumerable repetition, by the unexhausted workings of insanity, might be swept at once from the tablets of the mind, by a professional recipe; or the stormy passions of confirmed madness, already threatening the very foundations of intellect, might be hushed and subdued by the sovereign touch of some Æsculapian trident! He who seeks for events, not in miracles nor in magic, but in the operation of settled laws, will comprehend why years of persevering effort must be required for the cure of long established cases of insanity; and although he ought never to be sanguine in his hopes, yet, if his mind be endowed with a tact to perceive the subtle individualities of a case, and detect them under the disguise of a general character, he will feel that such a case is marked as distinct and separate from its class, and completely exempted from the general rules of treatment and prognosis: should he have learned to distinguish a derangement of mental functions from a destruction of mental organs, where insanity in the one case is disease, in the other death of intellect; then he may occasionally have the unspeakable satisfaction to discover, here and there, a case on the melancholy list, where the still "glimmering embers of a nearly extinguished intellect" may be kindled, and nursed into a clearer and brighter flame, by the delicate and dextrous administration of long continued and well adjusted moral and intellectual remedies.

"After all, it is an affecting truth, confirmed by the experience of nearly all Lunatic Asylums, that, with every advantage of time, means, and skill,

the proportion of recoveries in this description of patients, rarely exceeds six or eight in the hundred. With this disheartening fact in view, the Retreat had not ventured to anticipate the good fortune it has realized in the recovery of four out of fifteen cases from this class, amounting to the ratio of 26 per centum. While it unfeignedly deplores the sad destiny of those who still remain unrelieved by its exertions, it cannot but feel consoled and supported by the consideration of its comparative success in a class of cases, where the nearest approach to hope is often only a negation of despair."*

FRIENDS.—The ASYLUM for the Insane near Philadelphia, was founded by that religious denomination in imitation of the "Retreat" at York. It is erected in a retired situation, and on elevated ground, five miles from the city of Philadelphia, and one mile from Frankford. The buildings are of stone, and consist of a centre edifice with two wings. The centre building is 60 feet front and three stories high. The wings are each 100 feet front and two stories high. Long galleries divide the ranges of rooms from each other.

The doors have each a moveable small door in the pannel, to be opened from without. The windows of each room have cast-iron frames, and they are so constructed as to be darkened at pleasure. The edifice is warmed by heated air sent through flues issuing from stoves or large ovens, built in the arches of the basement of each wing.

To the buildings are attached workshops for the patients, and the whole are surrounded by airy grounds.

The patients are classified into the harmless and the violent and noisy; the latter are not allowed to come out of their rooms, while the former eat at table with the superintendant and his family. The diet is uniformly good, no meagre days being allowed,—but neither spirituous nor fermented liquors are permitted. The only modes of coercion are, if neces-

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* *Report of the Physicians of the Connecticut Retreat for the Insane, from the opening of the Institution, April* 1, 1824, *to April* 1, 1825.

Third Report of the Directors of the Connecticut Retreat for the Insane, presented to the Society May 11, 1827. Hartford, 1827. 8vo. pp. 11.

No report of the second year has been published.

sary, the shower bath, immersion in water, or the strait waistcoat.

"On every Sunday evening, all the male and female patients, except one or two who are permanently secluded, are collected together in their day-rooms, where a portion of scripture is read to them. This exercise seldom meets with any interruption from them, but on the contrary, there is great silence and quiet."

We have neglected to mention, although that of course will be understood from the name of this institution, that Friends or Quakers only are admitted as patients.

After this brief sketch of the police of the Asylum, we add the following statistical details, given by Mr. Waln.

Admitted,	from the opening of the Asylum in May 1817, to the month of March 1825,	158
Discharged,	Recovered, - - - - 53	
	Much improved, - - - 23	
	Improved, - - - - 17	
	Without apparent change, - 9	
	Died, - - - - - 21	
	Remaining in the house, - - - 35	
		— 158

Annual average number of patients during eight years, 19¾
Annual average number for five years ending in 1825, 31½
Average number during the year ending in March 1825, 33*

Besides these institutions, there are others of high reputation in the United States, but of which we have not been able to obtain any authentic account. We would particularly mention the asylum connected with the Pennsylvania Hospital. While the late Dr. Rush was in attendance, the cures

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* *An Account of the Asylum for the Insane, established by the Society of Friends, near Frankford in the vicinity of Philadelphia. By Robert Waln, jun.* (Philadelphia Journal of the Medical and Physical Sciences, Vol. I. New series.)

are said to have borne a very large proportion to the number admitted.

A brief comparison between the results obtained in our asylums with those of Europe, will form a proper conclusion to this paper. And first of the

PROPORTION OF CURED.

	Admissions.	Cured.	Centesimal proportions or No. cured in every 100.
In the *New-York Lunatic Asylum*, from 1795 to 1821 -	1584	700	44.19
Bloomingdale Asylum, 6½ years,	909	377	41.47
Connecticut Asylum, - -	106	34	31.17
Friends' Asylum near Philadelphia,	158	53	33.54

According to Casper, who has examined the returns from the principal hospitals and asylums in England and France, the mean of cures are as follows:

In France, out of 100 insane, - -	44.81
In England, out of 100 insane, - -	37.40*

We are, however, in doubt as to the propriety of some of the data assumed by this author, and it will hence be more satisfactory to notice the separate reports of institutions.

	Admitted.	Cured.	Centesimal proportion.
In the *Cork Lunatic Asylum*, from Jan. 1, 1798 to June 30, 1818,	1431	751	52.49†
At the *Salpetriere and Bicetre*, in France, the cures amount to 2-5ths of the whole,‡ -			40.00
At *Aversa in Naples*, 10 years, (1814 to 1823,)§ - -			29.70

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* American Medical Review, 1826. Vol. III. P. 13.

† Hallaran's Practical Observations on Insanity, 2nd. edition.

‡ Edinburgh Medical and Surgical Journal, Vol. XXVIII. P. 230.

§ Idem.

At *Bethlem*, London, (1817 to 1820,)* 54.00
St. Luke's, London, (1800 to 1819,)* 46.00
The average deduced in 1817, from the experience of 15 Asylums and Hospitals in Great Britain and Germany, and comprising nearly 14,000 admissions, was† - - - - - - 38.00

Proportion of cured, in Recent and Old Cases.

	Admitted.	Cured.	
Bloomingdale Asylum.			
Recent Cases, - -	489	286	58.48
Old Cases, - - -	380	72	18.94
Connecticut Asylum.			
Recent Cases, - -	40	31	77.50
Old Cases, - - -	66	4	6.06

These may be compared with the result in the

Retreat near York, (from 1796 to 1819.)			
Recent Cases, - -	92	65	70.65
Old Cases, - - -	161	47	29.19‡
Dr. Burrow's Private Asylum.			
Recent Cases, - -	242	221	91.32
Old Cases, - - -	54	19	35.18‡
Glasgow Lunatic Asylum.			
Recent Cases, - -			50.00
Old Cases, - - -			13.00‡

Sex.—This is not distinguished, except in the Bloomingdale and Connecticut Reports. They stand as follows :

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* Burrow's Inquiry into certain Errors relative to Insanity, p. 20.

† Edinburgh Review, Vol. XXVIII. p. 459. We refer those who are curious on this point, to the extensive tables in the works last quoted. As it would be improper to copy these in detail, we have only selected some of the more general results.

‡ Burrows, pages 281, 48, and 20.

	Males.	Females.
Bloomingdale, - - -	607	302
Connecticut, - - -	55	27

In explanation of the great excess of males in the Bloomingdale Asylum, a fact mentioned to me by Dr. Williams of New-York, may be stated. It is, that in the Bellevue Hospital, where the pauper lunatics are confined, the females greatly exceed the males; and probably, if the gross amount of both establishments were taken, the difference would not be great. In Scotland, according to the returns made by the clergy of the established church, the respective numbers in 1818 were as follows:

Males, 2,311. Females, 2,339.

In the fifteen Asylums noticed in the Edinburgh Review, the proportion was,

6,765. 7,356.

Dr. Morison, in his late "*Outlines of Lectures on Mental Diseases*," states, that in Great Britain and France, there are more females insane than males.

Mortality.

	Admissions.	Deaths.	
New-York Lunatic Asylum,	1584	153	1 in $10\frac{1}{3}$
Bloomingdale Asylum, -	909	46	1 in $19\frac{3}{4}$
Connecticut, - - -	106	1	1 in 106
Friends' Asylum, - -	158	21	1 in $7\frac{1}{2}$

According to Casper, the mortality at

York, - -	is one in nine.
Manchester, -	one in nine.
Montrose, - -	one in four.
Nottingham, -	one in eight.
Exeter, - -	one in twelve.
At Aversa, - -	one in four.
In Paris, - -	one in thirteen.*
At Cork, - -	one in three.

* Edinburgh Med. and Surg. Journal, Vol. XXVIII. p. 230.

Proportion of Insane to the Whole Population of the State of New-York.—In a former article (New-York Medical and Physical Journal, Vol. V. p. 205) we mentioned the results obtained from the census of 1825. In a population amounting at that time to 1,616,458,

The number of Idiots was	1421
of Lunatics	819
	2240

Or, 1 in 721.

In Scotland, the proportion is	one in	400*
In Paris, - - -	one in	350
In England and Wales, -	one in	2000 (Burrows.)
In London, - - -	one in	600†

There can hardly be a question, that the estimate for Great Britain is too low; but even granting it to be the same with London, and thus making the result in our own state more favourable than in foreign countries, still the proportion is one that deserves the serious attention of every philanthropist and statesman. We have but one asylum incorporated by the government for the safe-keeping and management of upwards of 800 lunatics and 1400 idiots, and it has been the practice until very lately to confine many paupers of the above descriptions, either in county jails, or poor-houses, or in private dwellings.

In April 1827, an act was passed by the legislature, forbidding the confinement of any lunatic or idiot in a prison or house of correction; nor is it even permitted to confine in this way a person furiously mad. High penalties are prescribed for violating the law. The utility of these enactments is already witnessed. In the county of Albany, commodious

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* Casper. Morison on Mental Diseases, 2nd edition, p. 72.

† Casper.

apartments, separated from the main body of the alms-house, have been completed for its pauper insane, and by an act passed in March of this year, the county of Washington is allowed to raise a certain sum of money for the erection of such additional buildings as may be deemed necessary and proper for the idiot and lunatic paupers.

Our commendation must, however, end in an acknowledgment of the increased attention paid by the legislature to the proper safe-keeping of this unfortunate class of beings. The system itself is radically defective. It does not make the requisite provision for their cure—it is far from effecting the necessary confinement—it does not sufficiently guard the public from the consequences of furious madness—and finally, it is the most expensive mode of providing for them. The experiment has been tried on a large scale in Great Britain, and to condemn it, I need only refer to the tales of horror and of misery developed by an investigation into the condition of lunatics in county poor-houses.

It is evident that the most humane, the most efficient, as well as the most economical plan would be, for the state to erect in its various great divisions, extensive lunatic asylums, provided with proper medical attendance, and all the safeguards so essential both to the patients and the public. Let these be increased, if the increase of the malady demands it. The burden of their support will fall equally upon all ; the success of their treatment which we might reasonably anticipate, would leave vacancies for new cases ; and instead of merely, (as at present,) keeping them in custody, to wear out a miserable existence, new trophies might be gained for the medical art, and many valuable citizens restored to their families and the community.

ART. III. *On the effects of respiring Cool Air in Pulmonary Diseases, in a letter to* DANIEL L. M. PEIXOTTO, M. D. By CHARLES DRAKE, M. D. Physician to the New-York State Prison.

New-York, June 1828.

DEAR SIR,

IN conversation a few days ago, I promised to furnish you with such facts on the respiration of cool air in pulmonary diseases, as I have been enabled to collect since the publication of my letter to Dr. Smith, in the last number of the American Journal of the Medical and Physical Sciences.

I have employed the remedy in more than twenty additional cases, and in general with effects that encourage me to pursue the investigation. The greater part of these cases were obstinate chronic coughs, that had resisted the routine of ordinary treatment. Some of them had been preceded or attended with pulmonary hemorrhagy, were accompanied with more or less pain or sense of soreness in the thoracic region, with expectoration, and other indications of pulmonary derangement. A part of these might even be considered as cases of incipient phthisis, exhibiting slight and irregular paroxysms of hectic; although the degree of febrile excitement was not considerable in any of them. In all such cases the remedy has invariably stilled the cough, and rendered the expectoration freer and easier: but where the febrile excitement was greater, with serious derangement of the respiratory function and debility of the patient, I have not been so successful. This I attribute, in a great measure, to the labour and fatigue incident to the mode of respiration. At any rate, in two cases of what may be denominated acute phthisis following severe attacks of pneumony, where the pulse was 120 or 130, weak and small, the respiration quick, laboured, and short, with other symptoms of great prostration, I was unable to reduce the frequency of the pulse by the respiration of cool air, although in one case it abated the cough and caused the patient to expectorate with more facility; still, on the whole, I was rather of opinion that it was injurious in both cases,

by producing a state of fatigue and exhaustion which they were not able to endure, and I abandoned its further use from an apprehension that the *mode* of respiration was not adapted to their peculiar condition.

Trials were made of the remedy in three cases of advanced phthisis; but I need hardly add, without doing more than merely aiding the expectoration, when the patients could be induced to continue it sufficiently long, which was difficult to do, for they complained that they had not *force to draw* in the air.

In two additional cases of asthma, I succeeded in shortening the paroxysms and in bringing the respiration to its ordinary state in a short time. Whatever objections may be urged against the remedy in pulmonic inflammations, I have no doubt that in very many cases of this disease, it will soon be admitted to be a most valuable means of relief.

I am now in the habit of reducing the temperature of the air much lower than formerly. In some instances I have brought it a few degrees below zero, and always endeavour to bring it as low as 32°. By reducing it very low, its respiration is more agreeable to the patient, and he is not obliged to continue its application so long for a given effect. In general, an hour thrice in the twenty-four hours will be found sufficient: when carried much beyond that extent, it is liable to produce fatigue, and perhaps stimulate from the mere muscular exertion. Doubtless from long use, patients will learn to breathe through a tube with almost as little exertion, as they take in the air in ordinary respiration. Such facility is greatly to be desired, and remains a desideratum as I have employed the remedy.

The effect of cool respiration on the pulse, although not always the same, is on the whole confirmatory of the sedative character of the remedy. Very generally the pulse was reduced in frequency, sometimes as much as 20 or 25 pulsations, provided it was not much above a hundred. I had only two cases in which the pulse was as high as 120; but in these, as I have before observed, I could not find that it produced any reduction.

The apparatus I employ to cool the air is made of tin or zinc, and is placed in a wooden vessel somewhat larger than it, to exclude the external heat, or otherwise enveloped in a layer of charcoal. When I wish to reduce the air below 32°, common salt is mixed with the pounded ice.

The following instance will show the opinion a common observer formed of the efficacy of the remedy on others, and also its beneficial effects in his own person, under circumstances that seemed to forbid its use. A remarkably stout, athletic man, labouring under hemiplegy, with symptoms of cerebral determination and high vascular excitement, was seized in February last, with severe and harassing cough, which was soon attended with copious expectoration, without affording any relief to the pulmonic irritation. The ordinary remedies were employed without benefit, and the man's vigorous habit began to waste under the almost constant cough and copious expectoration. Placed in the room that was appropriated to the cases that were using the cool air, he had constant opportunities of witnessing its effects on others; and finding that his own treatment was doing him no good, he begged that I would allow him to use the cool air also. I explained to him the danger of the remedy in his case; for he had been more than once in the course of the winter threatened with apoplexy, but proposed to give him the advantage of the same means in a modified form, and in a way that would obviate the danger I apprehended.

The weather of last March being remarkably mild and pleasant, I had this man well wrapped in blankets and placed in the open air every clear day, exposed to the influences of the south or west breeze for two or three hours. On returning him to his bed and covering him warmly, a tumbler of milk or water, made very cold, was given him in order to produce a gentle glow on the surface. In the course of a few days, I observed that his cough began to abate, and his expectoration to diminish; and he finally perfectly recovered from his pulmonary affection.

This man's recovery I attributed to the means I employed, but it seems I was mistaken; for a short time before he was

removed to the Sing-sing prison, in May last, he confessed to me that he had managed in the night, when the other patients in the room were asleep, to reach the tube of a refrigerator that was near his bed, and that he had used the remedy faithfully every night, sleeping for the most part during the day, until he became entirely cured of his cough. Still I am of opinion, that the exposure to the open air, and the ingestion of the cold fluids, were not without their good effects. Their remedial influences merit from physicians a more serious consideration than they have heretofore received. Much of the benefit derived in chronic pulmonary disease from travel may be justly attributed to the patient breathing a fresher, *stronger air*, as the vulgar term it, than he is ordinarily accustomed to, while his cutaneous surface and the muscular system, are maintained in a state of gentle excitement by the constant and moderate exercise. I experienced a few years ago in my own person, great advantage in a chronic pituitous catarrh, from riding in the midst of winter, exposed the whole day to a severe north-west wind, only observing to keep myself warm by much extra clothing. It is true, that the air in this instance, besides being very cold and dry, was also free from the impregnation of saline particles, which contributes doubtless to render the locality of this city so inimical to phthisical patients. In confirmation of the idea, that even intense cold is favourable to the healthy condition of the respiratory organ, provided the body be kept warmly clad, I will cite the remarkable exemption from pulmonary affections of Captain Parry's company, consisting of ninety-four men, in 1819 and 1820, when they wintered in the Polar Sea ; only one pulmonary case occurring, and that in a constitution previously impaired, besides being scorbutic ; and also the authority of Sir A. Crichton, that phthisis pulmonalis is by no means so frequent in the northern parts of Russia as in Great Britain. On the other hand, that warm and temperate climates, liable to even moderate transitions of temperature, will not procure immunity from pulmonary disease, we have the testimony of writers on southern regions. Dr. Chisholm says, that phthisis is by no means a rare disease in the West Indian islands.

He thinks it is caused by the variable state of the weather, though the degree of cold is never considerable, but lays no stress on the influence of sea air. Dr. James Clark coincides with him in accounting for its great frequency in many of the southern parts of Europe from the same cause. Fodéré, and I think with great truth, attributes its prevalence on the shores of the Mediterranean, to the air imbibing muriatic salts from the sea. Admitting then with Foderé, and other respectable authority that might be quoted, that the air on the sea-shore is invariably prejudicial in phthisis, it becomes a curious and interesting subject of inquiry, to ascertain in what such air differs from the air on mid-ocean, seeing that phthisical cases are so frequently benefited by sea voyages: Or do the good effects arise indirectly from the action induced on the other organs, notwithstanding the prejudicial influence of the sea air on the lungs?

I have heretofore noticed only the temperature of the inhaled air, but it must be evident to every one the least acquainted with these subjects, that the air becomes drier as its temperature is reduced: a condition universally allowed to be favourable to the healthy condition of the pulmonary organ.

These few remarks, which I have been incidentally led to make, require to be much extended and enforced by additional facts, to give the doctrine inculcated, that degree of proof which I believe it to be susceptible of receiving; and it is my intention at some future day, of returning to the subject, when I hope to elucidate my pathological views in a more satisfactory manner than my present means allow.

Respectfully, C. Drake.

Dr. Peixotto.

The following is the communication alluded to in the foregoing. It is an extract of a letter from Dr. Drake to Dr. J. R. Smith of Philadelphia.

"I have no medical intelligence to give you, except it be a plan I have devised for the treatment of pulmonary diseases.

It consists in causing the patient to breathe *cool air*, while the cutaneous surface is maintained in a state of preternatural excitement, by placing him warm in bed, or by enveloping his thorax with some stimulant application. I was led to the adoption of this means, by reflecting on the laws of sympathy, as inculcated by M. Broussais. That eminent physician contends, as you well know, that the sympathies between the skin and mucous membrane of the primæ viæ are direct—that the stimulations of the one are directly repeated in the other; and he hence disapproves of the employment of blisters and other irritating applications to the abdomen, in gastritis, enteritis, &c. On the other hand, he says, that the sympathies between the skin and the mucous membrane of the lungs are reversed—whatever debilitates the former, and repels the blood from its texture, tends to irritate the latter, and produce a sanguineous congestion in the pulmonary organ, a preliminary condition of inflammation. If such be the case, one would naturally suppose that a rational mode of treating pulmonary inflammation, would be, to place the system as far as possible, in a condition the reverse of that which has produced the disease. I have accordingly submitted the plan to actual trial in a number of cases in the state prison of this city, and the beneficial effects that I have uniformly obtained, render me somewhat sanguine of the value of the remedy. I do not believe that it can be solely depended upon in the treatment of acute inflammations, but conjoined with other antiphlogistic means, it may become a powerful auxiliary. Neither do I expect it will prove a remedy for phthisis pulmonalis; for by the time the disease commonly receives this fatal appellation, the pulmonary tissue is so deeply altered and ruined, as to place the disease in very many cases beyond the control of medical agents; but I think it will be found to be of signal service in the early stages of these chronic inflammations. Surely, by creating a general revulsion to the external parts of the system, by means of external heat or other stimuli, and at the same time directly introducing into the inflamed lungs cold, which by its sedative properties is so efficient in allaying inflammatory

irritation, and repelling the preternatural flow of blood from inflamed parts, we place the pulmonary organ in a condition well calculated to enable it to throw off the morbid action, and regain its healthy tone and functions. But facts are doubtless better than reasonings on this subject, and I will proceed to relate to you the way in which I submitted my patients to a trial of the remedy, and the results I have obtained from it.

" In order to excite and maintain the action on the surface of the body, the chest was enveloped in a vest padded with wool and lined with fur, and the patient covered warm in bed, or he was placed in a bath heated to 98°, and in this situation caused to inspire, through a tube, cool air brought from the external atmosphere, when the weather was sufficiently cold; otherwise, drawn from a reservoir in which it was cooled to about 40° of temperature, by means of ice. The operation was usually directed to be continued one hour, and repeated thrice a day; but the patients were frequently induced, from the benefits they thought they derived from it, to continue it much longer and to repeat it more frequently. They did not seem to receive any greater advantages from the warm bath than from the other mode of exciting external heat, and as its use was attended with much inconvenience, I have of late seldom employed it. The uncommon mildness of the past winter prevented me from using air lower than 28° of temperature, which of course was raised a few degrees higher by the time it reached the mouth. None of the patients complained of such air being too cold. I found that when its temperature was not higher than 50°, it seemed to make a decided impression, and that about 40° is the temperature that answers the desired purpose very well. I have accordingly of late brought the air to that point; and, from many trials, have no doubt that from four to six quarts of ice, even in summer, will cool a sufficient quantity for a day's consumption.

" It is, I think, during the hot season, when the skin is constantly kept in an excited state, and the other secretory organs are in full play, that the remedy promises to be of

more advantage in chronic inflammations than it can possibly be during the cold and variable weather of winter.

"The sensible effects produced by the remedy were tolerably uniform. When the temperature of the inspired air was not above 50° it invariably produced an agreeable sensation of coolness in the chest, occasionally with darting pains extending to the shoulders, which the patients referred to the external and muscular parts. On persisting in the use of the remedy for a long time and repeating it frequently, they sometimes complained of a sense of soreness and fatigue in the direction of the diaphragm, and sometimes also of fulness of the head and vertigo. The most constant effect on the pulse was to render it fuller: when it was preternaturally frequent, it commonly rendered slower; in some instances diminishing it ten to twenty pulsations in a minute; in a few cases, however, especially where it was rather slow, it rendered it somewhat more frequent. It very generally mitigated the cough, diminishing its frequency more than one-half in the course of two or three days, and rendered the expectoration freer and easier, so that the patient would frequently throw it up almost without effort. The effects on the cutaneous function were not less decided: it diminished the morbid heat, and rendered the skin more pliable and pleasant to the feel. The patients that used the remedy to any extent complained continually of great hunger, and it was with difficulty that I restrained them to a moderate allowance of vegetable food.

"Heretofore, in order to give the remedy a fair trial, I have employed it unaided by other means than the observance of low diet, and the benefits resulting have been too uniform and decided to be merely accidental. In one recent case of catarrh, it completely removed the affection in twenty-four hours. In all the old pulmonary cases it has greatly alleviated the disease; and notwithstanding the unfavourable circumstances under which these patients are placed, it still seems to be rendering them service. In one case where the cough was almost incessant, I succeeded, in a few days, in allaying it so much as to enable the patient to sleep quietly all night, and his cough is now comparatively rare and trifling.

In two cases of asthma, of many years' standing, the patients acknowledged that the remedy had afforded them more relief than any other means they had employed. The fulness of the pulse, the muscular pains, and the affection of the head, appear to indicate that the blood is diverted from the thoracic organ, and accumulated in other parts of the body. If such be the case, small and repeated venesections would render the effects of the revulsion from the lungs more permanent, and materially aid in removing the chronic engorgements.

"Dr. Binse, the resident physician of the prison, has attended to the administration of the remedy, and taken copious notes of the progress of the cases, which I shall at some future day condense for publication."

ART. IV. *Description of a new Stop-cock for Gum-elastic Hydrocele Bags and for the Stomach-pump.* By ALEXANLER H. STEVENS, M.D.

THE gum-elastic bag with the common stop-cock, which is commonly employed by the English and American surgeons, is a much neater instrument for throwing an injection into the tunica vaginalis than the syringe, which is, or was, not many years since, used by the French surgeons. Every one who has practised with this instrument, must have depended upon an assistant to close the stop-cock at the moment when he had pressed the contents of the bag into the cavity of the tunica vaginalis, and again to change it when he was about to throw in another bagful. I have seen the surgeon turning the cock with his right hand relax the pressure on the bag, the result of which was, that the injection was partially drawn back.

I have seen the left hand, by which the canula should be kept steady in its place, applied to the handle of the stop-cock, and the end of the canula, by this means, slip out of the cavity of the tunica vaginalis, and upon being pushed up, it was thrust into the cellular membrane, which in consequence received the injection; an accident which it is well known is invariably followed by extensive sloughing.

The stop-cock which I offer to the notice of the profession,

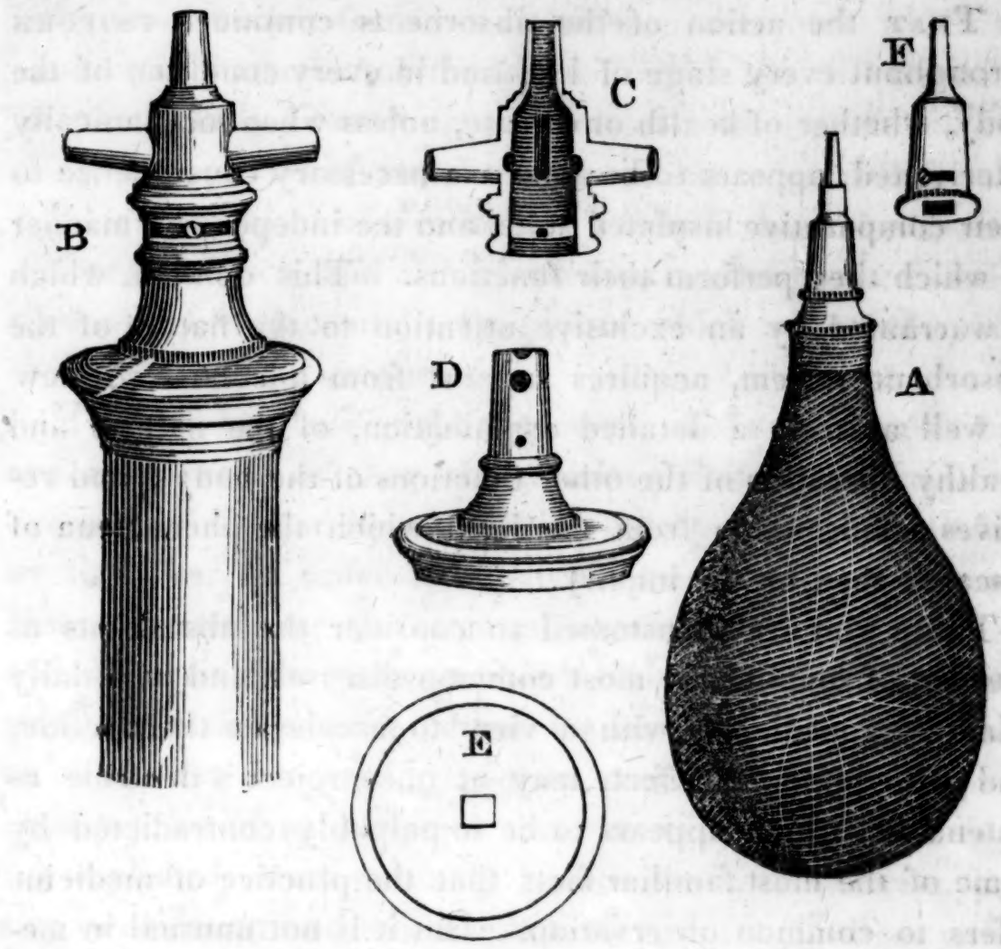
in contriving which I have been assisted by my late ingenious pupil, Dr. I. Dwight Harris, is very simple in its construction, cheap and portable, and it is calculated to obviate all the defects I have mentioned as appertaining to the ordinary stop-cock. I cannot more briefly describe it than to say, it is a simple pipe, one end of which is fitted to the canula of the trocar, the other and larger end receives another pipe closed at the end which enters the smaller pipe, but having an aperture on one side; the second pipe or hollow cylinder is attached to the gum-elastic bag, and turns within the first. A small groove in the first pipe or a semi-diameter of a very small circle affords a passage to fluids when the hole in the second pipe is turned so as to correspond with the groove in the first; at other times it is closed. Thus the two hands of the operator perform the three steps in throwing in the injection, viz. keeping the canula in place, maintaining a continued pressure on the bag, and closing the stop-cock, which last is effected simply by turning the bag slightly in its long axis. The annexed plate will render more intelligible the structure and management of this instrument.

A, the gum elastic bag, with a brass pipe terminating in a round end fitted to the canula, and having a square shoulder, fitted to a square opening in F, the internal structure of which is shown in figures C and D, except that it wants the lateral pipes of the stomach syringe.

In showing the surgical class the method of removing poisons from the stomach, in the session of 1826 and 7, the experiment was partially foiled by the eyes of the gum-elastic tube becoming stopped up by portions of solid food. To obviate the occurrence of this accident, I had the tube cut off above the eyes, and a perforated hollow ivory ball about half an inch in diameter firmly attached to it.

But the greatest objections to the apparatus for extracting poisons is, that the use of it requires the hands of an assistant as well as of a surgeon. To make this apparatus perfect, it should be made to effect three objects; 1st, To throw a diluting liquid into the stomach; 2d, To remove that liquid with the poisonous matters mixed with it; 3d, To discharge

this mixture without removing the pipe from the gum-elastic tube, and without the necessity of employing an *intelligent* assistant. These objects seem to be attained in the instrument represented in the annexed engraving.



B Stomach pump.
C Section of the outer pipe of stomach-pump.
D Section of the inner pipe of do.
E Section of upper cap and piston rod of stomach-pump.

In using the stomach syringe, the lower cap formed by D, inserted into C, is kept steady by the left hand of the operator, whose right hand embraces the piston handle. By supinating the right hand, the piston rod and syringe are turned, and the aperture at D is brought opposite to the right hand tube at C, and the syringe is worked until it is filled with the material to be injected into the stomach. Now the piston rod is to be turned again, until the screw in B is in the middle of the groove, in which it moves on directly upward. Thus the syringe communicates with the stomach, and by another slight turn of the piston may be made to discharge itself through the left hand pipe.

ART. V. *A Dissertation on the Uniform Action of the Absorbents.* By the late CORNELIUS E. DE PUY, M.D.* of New-York.

THAT the action of the absorbents continues UNIFORM throughout every stage of life, and in every condition of the body, whether of health or disease, unless when mechanically interrupted, appears to be almost a necessary consequence to their comparative insulated state, and the independent manner in which they perform their functions. This opinion, which is warranted by an exclusive attention to the nature of the absorbent system, acquires support from a connected view as well as from a detailed examination, of the natural and healthy operation of the other functions of the body; and receives confirmation from the light which the phenomena of diseases shed on the inquiry.

Those who are accustomed to consider the absorbents as the seat of some of the most common diseases, and who daily administer medicines with a view to accelerate their action, and with apparent effect, may at once reject a doctrine as untenable, which appears to be so palpably contradicted by some of the most familiar facts that the practice of medicine offers to common observation. But it is not unusual in medicine for error to assume the garb of truth so speciously as to elude detection, even though it be subjected to daily observation. Perhaps the result of an honest inquiry into the very circumstances which may be objected, and a fair explanation of them, will serve to establish the doctrine against which they may at first appear to militate.

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* The melancholy fate of the author of this paper is familiar to most of our readers. The particulars concerning it were detailed in a biographical notice published in the 14th No. of this Journal. The present paper first appeared a few years before his death, but as it is believed that the circulation of it has been rather limited, it is here republished, to gratify the wishes of a number of the surviving friends of the deceased. Whatever opinion may be formed in relation to the doctrines advanced in this production, our readers will have no hesitation to concur with us in awarding to it the meed of talent and ingenuity. ED.

In the progress of the subsequent attempt to prove the Uniform Action of the Absorbents, I shall have frequent occasion to advert to the circulation; and sometimes to infer necessary consequences respecting the nature of the absorbents, from known facts and familiar occurrences which we observe in the action of the blood-vessels. It will therefore be particularly interesting to contrast such peculiarities in those two systems of vessels, as have a more immediate relation to the object of this inquiry; it will show the distinct character of each, and also give a concise and comprehensive view of the fundamental principles on which we intend to rest the doctrine to be supported.

It is well known that the respective offices of these organs are as opposite as they are distinct; that it is the constant exertion of the one to remove that supply which is deposited by the other, in order to repair the waste of its antagonist. But, in examining the circumstances which actually occur, and, in tracing the consequences which would inevitably ensue from a different regulation, we are almost irresistibly led to infer, that the wasting process continues stationary at a certain point of action; and that the vessels by which it is accomplished, must not only be constantly in exercise, but also undeviating and uniform in their operation. This opinion acquires plausibility from a number of proofs, both direct and collateral, which warrant the position, that the absorbents are so singularly constituted, as to be actually incapable of being either accelerated or retarded.

On the contrary, we know that the blood-vessels possess a susceptibility, which gives them a range of action between the two extremes, which occasion mortification from excessive excitement on the one hand, and from direct debility on the other; which also renders them the chief agents in effecting the changes that we observe in the body, and in producing the variety of effects which we know it to suffer.

Both are endowed with that inherent vital energy which nature has originally diffused throughout the animal system. This *vis insita*, as it has been aptly termed, is adapted to the peculiar constitution of each, so as to subserve the different

purposes for which they were intended: its degree is doubtless so proportioned, in each, as to constitute a *relative* equilibrium; that in the performance of their particular functions, the *relative* action of both might be consistent with that characteristic temperament of the body, which results from the collective operation of all its powers; and that their individual functions, though distinct, might yet harmonize in the general economy of the animal machine.

But the principle of irritability, in whatever it may consist, appears to be so modified in the circulatory vessels, as to render them susceptible of being excited by a variety of other agents than their *internal*, and truly natural stimulus, the blood; such as the nervous influence, passions, caloric and the numerous class of medicines termed stimulants. This additional susceptibility renders the circulation the chief index by which we judge of the operation of these *external* agents on the system in general. Consequently, as all the other organs (the absorbents excepted) are directly, though more or less remotely, under the control of the circulation, they must also be disturbed, proportionally to their dependence, by the variations to which it is constantly exposed.

The absorbents, on the contrary, in the performance of their functions, have no immediate dependence on the circulation, excepting what is necessary for simple attachment at their termination, nor any intimate connexion with the minor organs. The other powers are successively put into action by the direct impetus of the heart and arteries; but the absorbents have a distinct source of independent motion within themselves. Equally callous to the impression of every external stimulant, and superior to the action of the most powerful narcotic, they imbibe in, perhaps, a peculiar and inexplicable manner, whatever comes in contact with their mouths: re-acting only to the *mechanical* stimulus of their contents, they propel what is thus absorbed, by their own inherent power, unsupported by any *vis a tergo*, and unassisted by that reciprocal aid and common consent, by which the other organs maintain their usual balance, and correct their occasional irregularities. Though they derive their materials of growth

from the circulation, and are supposed to be partially supplied with nerves, still they are not invigorated by the one nor stimulated by the other; for they steadily continue their action after the cessation of both. The heart may be the *primum mobile* of the system, but the mouths of the absorbents are its true *ultimum moriens*—vitality continues its vibrations there, after its quiverings have ceased in every other part of the body.*

Thus excluded from the ordinary participations of the system, they uninterruptedly continue their operations, both in health and disease, in excitement or debility, and at every period of life, so that they may be considered an exception to that general rule, which has established a correlative dependence, and an unanimity of action between the other parts of the system. Left to be governed by their own laws, they steadily pursue their uniform course, undisturbed by vascular irregularities, and unaffected by nervous sympathies, amidst all the commotions which frequently confuse the other operations of the body, and, sometimes, irretrievably destroy the harmony of its powers; nor do they droop in its languor, or participate in its debility, whether exhausted by fatigue, enervated by excess, or prostrated by disease: the life which they possess within themselves, maintains its ascendency over

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* Dissectors, on opening the body, have observed the lacteals, which were at first apparent, to contract and disappear: they are particularly found to be distended if an animal dies, or is killed, shortly after a full meal.

See subsequent proofs that the absorbents are exempted from the agency of external causes.

Hunter relates a case of dropsy, where the patient was 24 hours dying; when the extremities had become cold, the swelling began to subside, the urine to increase, and by the time the patient was dead, the absorbents had reduced them to their natural dimensions.—See *Hunter on Inflammation.*

"They (absorbents) continue to receive and transmit their fluids after the heart and arteries have ceased to beat, and the red blood to circulate"...."after the death of the animal, and after the phenomena of life have ceased."—*C. Bell.*

"Even after death, they (lacteals) expel the chyle."—*Haller.*

Query—Are not dropsical swellings always sensibly diminished after the heart and arteries have ceased to act? Is the thoracic duct always found, on dissection, to be distended?

the death of the body, till, probably, they are killed by the poisonous quality of its dissolving materials. As a component part of the system, they must ultimately yield to the disorganization and confusion which ensues after death: their energy and structure cannot resist chemical affinity, when it has acquired sufficient power to separate the elementary principles of the animal fibre; and the period of the cessation of their action might probably be fixed at that moment when sphacelus attacks a living part, or putrefaction commences in the dead body.

In stating that the absorbents are only obedient to the stimulus of their natural contents, it was not intended to convey the idea that their re-action depends on any stimulating *quality* of the chyle and lymph. It is more probably produced, and regularly perpetuated, by the bulk of these fluids, operating *mechanically* on the coats of the lacteals and lymphatics, which contract to the stimulus of distention. The capacity of the absorbents is limited to the natural diameter of their tubes, and this is fixed by the unyielding structure of their coats and restraining valves; therefore, the exciting power of distention cannot be made to exceed that determined elevation. But the quantity of fluid in these vessels may be, and often is, less than the capability of their canals to contain; still, as no other stimulus can interfere with that of distention, their contraction must remain uniform as to frequency, though it is variable as to force; for the power exerted is in proportion to the bulk of the distending fluid, which, therefore, in both instances, is propelled with an equal velocity.

It was remarked, that the particular mode of action, by which substances are imbibed at the extremities of the absorbents, is probably peculiar, and perhaps inexplicable.

It has occupied the attention and divided the opinions of eminent physiologists. Want of observation, and perhaps difficulties arising from the very nature of the subject, render any opinion respecting it hazardous; for though plausible, still it must chiefly rest on conjecture. The most prevalent doctrine, at present, attributes absorption to a living action of, what is called, the mouths of the absorbents: but although

the alternate contraction and dilatation, which this hypothesis implies, could be proved to exist, yet it would be inadequate to the effect. It supposes the fluid to rush into the expanded mouths by its gravity; but the lymph could not thus enter the extremities of those absorbents which ascend perpendicularly from the upper part of the cellular cavities, without the assistance of such a contractile or elastic power of the cellular membrane, as does not exist.

Several circumstances accompanying, and consequent to the process of absorption, together with some concurring facts in physiology in general, seem to favour the exploded doctrine of *capillary attraction.* Though it has been satisfactorily proved, that this principle cannot be applied to the whole extent of the absorbent canals, yet the philosophical objections are by no means decisive against its limited application to the extremities of those vessels, leaving the fluid, after being absorbed, to be propelled by an inherent, and, what remains to be proved, an independent muscularity. The structure of these radicles, to which alone the term *absorbent* is justly applicable, appears favourable to the supposition of their intrinsic action. They are composed of very minute and truly capillary tubes,—which soon become enlarged, or rather terminate in the more expanded canal of the main vessel,—where its muscular, or elastic contraction may be supposed to commence. In this respect, they are analogous to the termination of the tubes leading from the puncta lachrymalia to the lachrymal sac. As the action of these puncta must, at least, resemble that of the absorbents, the most obvious effects of the former may assist us in our conclusions respecting the nature of the latter. If the tears were imbibed by a vital action, we should observe a constant motion in the puncta; for alternate dilatation and contraction are the only living efforts by which a fluid can be successively admitted into and propelled by a hollow muscle; we should, therefore, perceive them to open and close in regular succession; because it is required that the impulsive contraction should commence at the surface, or the fluid would necessarily regurgitate at the extremity of the canal. But it is well known that the openings of these puncta

are permanently expanded during life, except when (as in introducing Anel's syringe) they are occasionally closed by the surrounding muscular fibres, with which they are evidently supplied to prevent obstruction, to which their exposed situation renders them constantly liable. The weight of the fluid may facilitate its descent through the opening into the lower lid, but no "successive effort of the columns" (*Richerand*) could enable it to ascend into the superior punctum. To say that "the tears are taken up by a real process of *suction*," (*ibid*) is, at best, a very enigmatical explanation. If then capillary attraction is required to explain the phenomena of lachrymal absorption, we may, by referring identical effects to similar causes, deduce from it a just analogical inference respecting the nature of absorption in general.

It may be objected, that the mouths of the absorbents give preference to certain substances in exclusion to others, which are in contact with them at the same time. But the objection itself is too questionable to be admitted as proof against the validity of the doctrine. Instead of that fastidiousness which is so generally, but perhaps gratuitously, attributed to the absorbents, it appears that they take up substances of equal fluidity, with the same expedition, whether they are offered to them separately or in combination. A mixture of various ingredients, of equal solubility, is imbibed without any evidences of an active intelligence, or instinctive impulse in the selection. Acrid medicines are absorbed by the lacteals together with the bland nutriment; and poisons are admitted, by the cutaneous lymphatics, in company with water. The apparent partiality of the lacteals for chyle, and supposed antipathy to fæcal dross, are simply the consequences of the first being composed of that part of the food which is most readily and completely dissolved in the fluids of the stomach, and therefore most easily imbibed. They do not select the chyle from amongst the fluids which the exhalents pour into the intestines, during the operation of cathartics, for it is sometimes distinctly discovered in the fæces. When the contents of the primæ viæ become vitiated, in consequence of improper diet, or a disordered state of the stomach and bowels, the matter, notwithstanding,

is absorbed; and often in such quantity as to disturb the system, and even contaminate the whole mass of fluids, as in typhus. In all these instances, instead of any nervous attachments and antipathies, they evince a remarkable indifference and insensibility. The selection of any liquid appears to depend rather on its comparative fluidity, than the exercise of a discriminating choice on the part of the vessels: hence water is sooner taken into the system than any of the fluids that are ordinarily drank. And it is a remarkable coincident fact, that water, according to Martin's philosophical experiments, ascends capillary tubes to a greater height than milk, bile, urine, or any other fluid. This, together with "the exceeding great velocity of capillary attraction," (*Martin*) at the end of the tube immersed, accounts for the speedy removal of repeated large draughts of water from the stomach; and also for the apparent increased absorption when it is injected into the urinary bladder, as in the experiment of Bedingfield. (*Compendium*, p. 242.)

The tenuity* of the substance absorbed appears to influence the quantity removed; which is also in some degree increased when the stomach, bladder, and cellular interstices contain sufficient fluids to maintain a constant plenitude in the absorbent tubes; hence the body acquires weight when exposed to a damp air, and especially when it is immersed in water. But these advantages only facilitate the labour, without accelerating the action of the absorbents, or the progressive advancement of the fluids they convey; therefore, these changes, in the result, can neither controvert nor invalidate the proofs that will be adduced in favour of their uniformity.

The *condition* of the substance acted on is then to be regarded as the cause of occasional variations in the result of the process. The subsequent examination will show, that this principle can also be applied to the removal of the living so-

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* This is intended as a general rule. It would be difficult to ascertain, whether alcoholic liquors also constitute an exception in animal absorption as they do in the attraction of capillary tubes.

lids of the body; that it affords a satisfactory explanation of every apparent irregularity in the absorbent vessels, which cannot be attributed to changes and alterations in their action, without admitting irreconcileable contradictions in what may be termed the fundamental laws of the animal economy, and thus create confusion in the grand scale of operation.

The principal proofs of the doctrine, of which a general statement has been given, require more minute investigation. It will be sufficient to particularize a few of those familiar occurrences which most strikingly indicate that impassive nature and independent action of the absorbents, which enable them to maintain the uniformity they constantly evince.*

When the body is excited by violent exercise, from exposure to high temperature, the use of alcoholic or other medicinal stimulants, and also during a paroxysm of anger, we observe a bloated state of the surface and soft parts beneath. This could not occur if the lymphatics partook of the general excitement, for they would remove the interstitial exhalation, on which the tumid appearance in part depends, as rapidly as it is deposited. The lymphatics not only show an indifference to the agents of this excitement, by remaining unmoved during its violence, but also prove their superiority over the consequent languor; for as mildness of temper succeeds the turbulence

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* The doctrine of the uniform action of the absorbents was accidentally suggested, and a number of plausible reasons at first concurred to invite a more particular inquiry. The original manuscript was written without referring to any author but I. Hunter, from whom objections were chiefly anticipated. The numerous facts and acute observations contained in his justly celebrated work on the blood, served, notwithstanding his conclusions to the contrary, to strengthen the opinion. In consulting the opinions of some writers, somewhat particularly, respecting absorption, I have since found that C. Bell suggests a similar idea, in his strictures on Hunter's doctrine: but his observations appear to be at least occasional, if not entirely dictated by opposition, which he seems to have regarded more than the consistency of his reasoning; for whilst he speaks of the probable uniform action of those vessels, he allows them to be subject to the agency of external causes, whereas the doctrine can only be predicated on their impassive nature.

of rage, and as sure as a storm of the elements is followed by a calm, so must vascular action subside as far below its ordinary standard, as it was previously excited beyond; and the reflux is attended by a proportionally less quantity of exhalent secretion. This gives an advantage to the uniform absorbents, and enables them to remove the unusual deposite, by their continued action, and reduce the body to its ordinary dimensions, by the time the circulation has recovered its former tone.

How could the application of a blister, or boiling water, produce vesication, if the cantharides and caloric irritated the extremities of both the lymphatics and exhalents? Would not the increased action of the one remove the redundant secretion of the other? And is not the fact, that the cuticle becomes separated and distended, a convincing evidence that the former is insensible to both? If drastic purgatives also irritated the mouths of the absorbents, would not the latter carry off the extraordinary secretion which the exhalents pour into the intestines, and thus prevent the liquid discharges per anum? The experiments in these instances are perfectly fair. The irritating substances are equally applied to both vessels at the same time and under the same circumstances: the result clearly and decidedly manifests the dissimilarity of character for which we are contending.

The above instances, which embrace some of the most active and diffusible stimuli, and also some of the most powerful external irritants, prove that the absorbents are insensible to the action of stimulants.* But they also appear to be superior to the operation of depressing causes, even the most deadly narcotics.

When opium, or any other vegetable poison, is conveyed into the system from the stomach or surface, the absorbents are

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* Haller supposes the absorbents to be excitable by chemical stimuli, because they shrink on the application of sulphuric acid; but this more probably is the effect of the constringing quality of the acid, which it equally exerts on dry leather and on the living fibre.—*Elements Phys. Lib.* II. *Sec.* III. ℌiii.

not only first exposed to their paralyzing effect, but have also to sustain the attack of their concentrated powers, for they are less diluted than after they have been diffused through the mass of fluids in the circulation, yet these vessels persist in conveying them after they have stupified every other organ, and suspended every other operation.

If the naked body be exposed to cold damp air, or immersed in cold water, the capillary blood-vessels soon become inactive and benumbed, but the increase of weight which the body, according to statistical inquirers, continues to acquire, evinces that the cutaneous lymphatics persevere in their usual operation; and that they are not more affected in consequence of the abstraction, than from the increase of caloric.

The torpid effects of moisture, on the exhalents, is favoured during sleep by the calm, and somewhat languid action of the blood-vessels, and the body in that state acquires weight, though the quantity added by the lymphatics, is the same as when awake; because more is retained than during the exercise of the day; and hence absorption is erroneously supposed to be increased in the night.

The blood-vessels of a paralyzed limb lose their natural vigour, though they continue their action; but its progressive emaciation plainly shows that the strength of its lymphatics remains unimpaired. The different causes of every species of emaciation concur to lessen nutrition, whilst the existing animalized substance is proportionally diminished by the ordinary action of the absorbents. The consequent waste, which, on a superficial examination, appears to be owing to a morbid increase of their action, is only the effect of their unwearied diligence; and proves, that they do not suffer from that general debility, which is frequently the cause, and always the effect, of atrophy.

When the body is reduced to an extreme degree of debility by typhus fever; when a few feeble and indistinct efforts of life are the only remaining evidences of its existence; it is then that the practical physician acknowledges the independent nature and uniform action of the absorbents, by his solicitude to keep the bowels clear and skin clean, that these

vessels may have no opportunity to aggravate an evil from which they alone are exempted.

When death is actually progressing, and after every action of the skin has ceased, the cutaneous lymphatics still persevere in removing the thinner parts of the fluid, which exudes through its pores, and cause that clammy and adhesive quality of the matter which collects on the surface, and obscures the sight of the dying patient. It therefore appears to be as erroneous to speak of inactivity and torpor of the absorbents, as it is useless to attempt any direct means to promote their action.

The friction with which external applications are accompanied, to accelerate their absorption, only produce that effect by mechanically bringing the substance in closer contact with the mouths of the lymphatics, in consequence of pressing it between the scales of the cuticle; which promotes the facility of absorption, but not the activity of the absorbents. The cuticle impedes absorption in proportion to the mechanical obstruction it occasions; hence, ointments, &c. are more speedily removed from those places which are habitually moist; where the epidermis is the thinnest, and where it is accidentally abraded. But though there is a difference in the effect produced, yet the real capacity, and perhaps actual exertion of the absorbent mouths, (whatever may be their mode of operation,) may still remain the same over the whole surface; for it is manifest that the effect of the same power must vary if exerted under different disadvantages. Farther, if capillary attraction should be the mode by which fluids are made to ascend the minute extremities of absorbents in general, it is reasonable to suppose that they exert the same force in abstracting the moisture from more solid substances, as on the most perfect fluids; though a greater quantity is conveyed in this instance—minute division facilitates chemical action, yet the absolute affinity between bodies, containing equal quantities of matter, is the same in mass, as when reduced to atoms.

It may be objected to the impassive nature and uniform action of the absorbents, that they are subject to inflamma-

tion from animal poisons. But it is not improbable that the peculiarly virulent and subtle nature of these poisons, enable them to excite the surrounding nerves and blood-vessels, through the very thin and delicate coats of the absorbents, and thus inflame the parts in which these vessels are imbedded; and that the pain thereby produced, has been mistaken for an evidence that they are supplied with nerves. But suppose, that the absorbents are really inflamed, in this instance; it follows, that though they possess an increased tendency to act, yet their actions cannot be increased, in consequence of the turgid state of their coats from the injection of red blood.

The natural and healthy exercise of the animal functions furnish numerous proofs in support of the doctrine; and its physiological exposition is perhaps as novel as it is interesting. Without the prolixity of detail, it will be sufficient to examine the causes of the advancement of the body to maturity, and consequent decay; for however the particular actions of the different organs may vary, still the first is one of the grand results of their operation in assemblage;—the second a necessary consequence to the accomplishment of that object.

The progressive stages of life, from infancy to decrepitude; the growth of the body in youth; its stationary condition at manhood, and its gradual decline into old age, present familiar, but interesting appearances. In what manner is the balance of the absorbing and secreting vessels affected during the increase and waste of the body? Why do they acquire an alternate preponderance at different periods of life; and what causes the softness of texture in infancy, the firmness of fibre at manhood, and the rigidity of age? The vague references of physiologists to the activity, vigour, and languor of *vascular* action, without determining both the absolute and relative agency of each system of vessels concerned; their remote and indefinite allusions to cause and effect, leave the explanation of the phenomena as unsatisfactory, as if they had attributed them to the arbitrary result of pure necessity.

If the sanguiferous and absorbent systems both possessed the same degree of excitability, and were equally susceptible

of the impression of external stimulants, there would continually exist an equable balance of action between the vessels which supply and those which remove; the action of both would be equally excited, in the early part of life, and sink, *pari passu*, into its decline; therefore no increase of bulk could occur in the former stage, nor that gradual diminution of matter which happens in the latter; consequently, the size of the body would remain stationary throughout, and we never could emerge from the state of embryo. It is well known, that nourishment and growth is accomplished by the assimilating power of the blood-vessels, still I do not know how we are to avoid the above ridiculous conclusion, unless we admit that the impassive nature, and uniform action of the lymphatics give the circulation the necessary ascendency. Grant this, and the process of animalization developes itself, with its whole train of consequences, and exhibits a more fair and definite character of some of those grand principles which form the basis of physiology.

The natural susceptibility and activity of youth give the assimilating organs the proponderance at this age: an increase of size is the consequence; but in order to proportion the different parts, so as to give symmetry to the whole, nature has conferred more or less activity on the blood-vessels of particular parts, together with the peculiarity of office which distinguishes each organ. As we approach the climacteric period of manhood, the mobility of the blood-vessels gradually settles into a more steady mode of action, in proportion as the system becomes less sensible to habitual impressions, and as the fibre acquires a denser structure and firmer tone. The less frequent, and more inconsiderable irregularities of the circulation, counterbalance each other, and leave a medium of action in unison with that of the absorbents. An equilibrium then exists between the two: the waste produced by the one is repaired by the additions brought by the other, and the quantity removed is equal to the supply. But the blood-vessels cannot maintain themselves at the equable standard of the absorbents; for subsequent debility must follow previous excitement—a law, in which the

animal body, with all nature, must acquiesce. The active exertions and rapid advancement of youth, as necessarily lead to the decline and imbecility of age, as subsequent languor is certain to follow the temporary exhilaration of ebriety: hence longevity is rare, where temperament or climate causes an early and rapid evolution of the organs; and speedy maturity, throughout all animated creation, denotes a short existence. Consequently, in advanced life the circulation begins to be enfeebled; many blood-vessels become impervious, and whole organs are gradually obliterated; digestion also becomes impaired, and nutrition is consequently imperfect; the circulation being incapable of supporting the *peculiar secretion (Haller)* of the lymphatic glands, these for want of excitement are often entirely removed; the uniform action of the lymphatics gives them a proportionate ascendency; the more fluid part is first carried off; hence the solids become more dense, which again impedes the operation of the declining powers; the whole body shrinks, till the furrowed brow and wrinkled visage leave traces of a waste which the blood-vessels are unable to repair. Corpulency sometimes supervenes—"a kind of *imitation* of real growth." *(Haller.)* But the decrepitude of age, and the approach of natural death, are not retarded by this delusive appearance; the struggling energies of life, unequal to the burden, often yield the sooner to its pressure. The apparent effects of natural decay may also be obviated for a time by goading the blood-vessels to an extraordinary exertion by additional or more powerful stimulants; but the expedient only hastens exhaustion, and renders the body an earlier sacrifice to death. The duration of life, unless prematurely arrested, is limited to the established bounds of that original capacity with which nature has endowed the constitution; and its period will be shortened or protracted according to the profusion or economy with which we spend the determinate measure of inherent energy; though its enjoyments, like the transports of intoxication, may render us unconscious of its actual consumption, and regardless of the

future consequences, yet the latter will eventually occur, as surely as the former is in present operation.

The steady persistance of absorbent action is also remarkable in the disappearance of those parts which are only designed for temporary purposes, as the thymus gland, membrana pupillaris, alveolar processes, &c. The idea, that a new activity is conferred on the absorbents, for the removal of these parts, does not accord with the usual simplicity of nature. It supposes the blood-vessels to continue an useless labour; for the object may be more directly and expeditiously accomplished by diminishing the customary accretion. "Inutility, debility," &c. *(Hunter,)* are the assigned causes of such absorption. It is consistent with known laws, that such direct sedatives, as they must be, if their agency is not wholly ideal, should operate by paralyzing the nerves and impairing the action of the blood-vessels. But it requires an effort of credulity to suppose, that whilst they depress every other power, they at the same time stimulate the absorbents. This implies an effect directly opposed to their natural tendency—a contrariety of qualities, and a nature discordant with itself: or, a lawless disposition on the part of the absorbents, to act in direct opposition to principles which universally obtain in the organized fibre. In support of the probability of the first mode, and improbability of the second, it is only necessary to direct the attention to the abundant proofs, already advanced, that the absorbents are not under the immediate control, nor indirect influence of any accidental cause, whether of a depressing or an enlivening nature.

Pathology unites its testimony to the preceding facts, in favour of the doctrine. The causes, symptoms, and consequences of some of the most common diseases, unitedly point to the Uniform Action of the absorbents. If we regularly trace the progress of those diseases through their different stages, and then take a retrospective view of all their phenomena, in connexion with the sensible effects of the remedies usually administered, we find ourselves conducted to that conclusion, as if to an unavoidable and necessary result.—A brief examination of the nature and treatment of a few

of those diseases, in which the absorbents are supposed to be particularly and primarily concerned, will not only elucidate the doctrine, but also show the extensive pathological application of the principles it embraces.

The commencement, progress, and termination of what is termed *healthy inflammation*, are replete with facts illustrative of the subject in question. I will only direct the attention to a few of the most prominent. The exciting causes of inflammation are all stimulants, and sometimes excite such violent action in the blood-vessels as to disorganize the structure of the part affected. But the absorbents so completely resist the most intense and concentrated exertion of their power, that the calm and steady action of these vessels is not even noticed amidst an excess which transcends their fixed standard; hence the tumefaction, (so far as it depends on increased interstitial exhalation,) which their uniform action renders them unable to prevent. But when the strength of the blood-vessels is spent in the inordinate effort, and they are sinking into consequent indirect debility, it is then that the absorbent action becomes more or less apparent, according to the degree to which the circulation subsides below its healthy range.

The terminations of inflammation may truly be considered as indicative of the condition of the blood-vessels; therefore adhesion, suppuration, ulceration, and mortification, may with propriety be regarded as general terms, denoting different stages, and serving to express the strength which the circulation retains, or the debility to which it is reduced, without reference to any change in the mode, or increase of absorbent action. The progress of these terminations is accelerated or retarded, and the appearance of each is diversified by peculiarities of constitution, and by the interference of a variety of accidental causes, which it would be irrelevant to enumerate: the influence of which, on absorption, is to be estimated from their tendency to increase the debility of the blood-vessels. When the strength of the system or a part gradually fails, integrity of structure is maintained under the progress of absorption; as in general emaciation, the re-

moval of the thymus gland, &c.; but when vitality, from excessive action or any other violence, is speedily reduced to the verge of extinction, or becomes exhausted beyond the ability of the blood-vessels to furnish an adequate supply to preserve the organization of the part entire, then the progressive and unresisted depredations of the absorbents not only produce a diminution of bulk, but also an erosion and separation of parts: an ulcer is the consequence; which extends more rapidly, as the debility of the part approaches nearer to mortification. And when mortification actually occurs, the absorbents give new proofs of their unremitting perseverance in the speedy separation of the dead and living parts, as soon as the blood-vessels have acquired sufficient strength to arrest the progress of decomposition. It appears, therefore, improper to consider ulceration as "a *substitute* for mortification," *(Hunter:)* it only indicates an approach to that condition.

Hence it appears to be incorrect to employ the terms, *progressive*, *interstitial*, and *ulcerative* absorption, to designate a change of condition, or peculiarity of action in the absorbent system, since these different appearances are essentially imputable to a comparative deficiency in nutrition. The real state of the ulcerated part teaches, that the supposed increase of absorption is only apparent; that *ulcerative* absorption is not "a *morbid* process," *(Thompson,)* but a natural, and in itself, salutary action, apparently rendered morbid by the *unhealthy* condition of the part in which it is exerted; and that absorption, though the proximate, is not the *morbid* cause of ulceration. If increased absorption were the most efficient cause of ulceration, then the matter from an ulcerated surface would only vary as to its degree of consistence; but as there is an evident change in its quality, corresponding to the slower, or more rapid progress of the ulcer, it follows that the secreting exhalents are chiefly concerned in the diseased process.

The exciting causes of every species of ulceration which Hunter enumerates, have all a tendency to produce that debility which he admits to be "the basis of every other cause

of the removal of whole parts." It is on this account that parts most distant from the centre of circulation are most subject to ulceration; and that recent and adventitious formations are more liable to be absorbed, than those which are original.

Irritation, which is the effective agent of Mr. Hunter, can only indirectly promote absorption by deranging the enfeebled powers of assimilation, and superadding a morbid to a weakened action; hence the more irritable the ulcer, the more rapidly does it extend. Its character also, whether simple or malignant, and the varieties of each, depend on the nature and degree of the irritation, together with the peculiarity of action it may excite in the exhalents. Opium proves beneficial, especially in simple ulcer, by allaying this morbid irritation; but not by promoting absorption as Darwin was led to infer, in consequence, I presume, of entertaining the very singular opinion, that "no ulcer can heal unless the absorption from it is as great as the deposition in it."—*(Zoonom.)* Irritability, moreover, could not be conducive to absorption; for it is known that irritation weakens the tone, and injures the healthy functions of an organ. This fact would rather induce us to expect that irritability in the absorbents would prevent the waste of a part, on the same principle that such a state of the blood-vessels increases the evil under which it suffers.

It is admitted by Hunter that absorption requires a passive state of the part: "a condition incompatible with its existence," but the whole tenor of his observations on ulceration, is to prove that the waste chiefly and almost exclusively depends on the accelerated action of the absorbents. In referring results to a "new activity" in these vessels, which are manifestly the consequence of defective nutrition, he was obliged by refined if not abstruse reasoning, to attribute a stimulating quality to such novel and problematical agents as *removal*, *necessity*, and *death*. But this conclusion is not more strange than the extensive and arbitrary application of the term *sorbentia* by Darwin; who ascribes to such immediate sedatives, or rapidly debilitating narcotics, as opium, digitalis and tobacco, the reverse power of exciting the absorbents.

The doctrines of both, respecting the nature of absorption, imply a more incredible peculiarity in the absorbents, than that of their uniformity :—viz. the disposition of being excited and invigorated in proportion as the power of every other part becomes enfeebled and exhausted. And the fact, that absorption progresses in such conditions of the body, as languor, exhaustion, palsy and death,—and during the operation of medicines producing these conditions of the system, requires, that we either allow those vessels that unnatural susceptibility, or admit the exclusive independence of their powers and uniformity of their action. Those who are inclined to reject the latter as visionary, should reflect before they decide, on the paradoxical and repugnant alternative which they will be compelled to adopt.

Dropsy appears to offer serious objections to the Uniform Action of the absorbents. The effusion seems to contradict the opinion that they are not subject to torpor; and it may be thought that the usual method of cure refutes the doctrine that they are incapable of being excited. But an unbiassed examination of the pathology and cure of this disease may show, that in this, as in other instances, the fault of the circulation is charged to the absorbents; and that the sensible effect of the action of medicines on other organs, are strangely attributed to changes which they could not produce in the absorbent system, even if its vessels were susceptible of their action. Our remarks will be confined to dropsy, when a disease of the system, and consequent to debility: the same general mode of reasoning will apply to it when partial; and there can be no controversy respecting the vessels concerned, whether it is occasioned by either plethora or obstruction.

The remote debilitating causes of the species of dropsy under consideration, the enfeebled and relaxed state, and, I will venture to add, the peculiar morbid action or dropsical *tendency* of the blood-vessels, enables us to account for the watery profusion with which the system is inundated, without calling in the really foreign aid of the absorbents. The disappearance of fat, and the progressive emaciation attendant

on this disease, also evince that the lymphatics are neither torpid nor indolent. But the nature of the effusion affords the most convincing and conclusive proof: its quality differs from the ordinary healthy exhalation; hence it must be a *morbid* secretion, and shows that it not only depends on relaxation of the blood-vessels, but also on a disordered condition of their exhalents. If, in connexion with these facts, we reflect, that the extremities of the absorbents, in consequence of being continually immersed in the dropsical fluid, can preserve a constant state of repletion, and convey the full measure of their capacity, it appears probable, that even more than the usual quantity of fluid is imbibed during the dropsical accumulation. The removal of the effusion in the case of protracted death, which has already been quoted from Hunter, proves at least that, instead of any torpor, the action of the absorbents is regularly continued in dropsy.

To promote absorption is one of the chief indications of cure in this complaint. But it is difficult to conceive how the remedies that are generally administered, could have the intended effect, even if the process could be expedited by stimulants. They must either act directly on the absorbents by their presence, or their action must be extended to those vessels through the medium of sympathy. The improbability of either has already been anticipated. The most general and powerful stimulants have not evinced any perceptible effect; and we might, from that consideration alone, infer an equal insensibility to the action of such as are partial in their operation, even if they could arrive at the lymphatics with their composition unchanged. But since they cannot reach those vessels without being subjected to the peculiar secretory action of the exhalents, it is most probable that their qualities must be materially altered in consequence of being assimilated to the product of that action, and moreover subject to all the variety to which a secretion is liable. If they still retain their stimulating power, it must be equally exerted on the exhalents, and thus defeat the object for which they were administered. It is still more improbable that any associated action is extended to the lymphatics: it would

require an extraordinary, and truly mysterious influence of sympathy, to excite a corresponding effort in a part which does not suffer from paralysis, or division of its nerves.

There is no necessity for attributing uncommon powers to the medicines generally administered in this kind of dropsy. If it be only granted, and the concession is certainly consonant with fact, that diuretics, cathartics, &c. act on the same parts, and in the same manner, when given in this disease as when administered in other complaints, we will then not be perplexed with inconsistencies in accounting for their beneficial effect.

The most probable operation of diuretics will illustrate this position. The disease consists in a *local determination* of a *general morbid tendency* to inordinate serous effusion or secretion. Diuretics, by stimulating the kidneys, produce a *counter* local afflux of the fluids to these organs; and as the increase of one secretion diminishes the quantity of others, hence we find a dry, harsh skin, and paucity of urine in dropsy. By exciting the kidneys, the general current is diverted from the cellular interstices and internal cavities, to the urinary organs: the exhalents, being thereby relieved, remain almost inactive; and their cessation allows the uniform lymphatics to diminish the existing effusion with sufficient rapidity to account for the diminution of bulk. It follows, as a general deduction, that the subsidence of the dropsical accumulation is an indirect consequence of increased urinary action.*

The effect of emetics, cathartics, and such medicines as operate on all the emunctories, like mercury, can be satisfactorily explained on the same principles.

The disappearance of large accumulations in a short space

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* The diuretic effect of digitalis probably depends on the torpor it produces in the blood-vessels; thus suppressing the action of the exhalents, and arresting the progress of effusion: whilst the continued action of the absorbents accumulates the serous fluid in the blood-vessels, which excites the kidneys in proportion to its quantity. Thus, though the mode of operation is different from that of other diuretics, yet its effects are the same.

of time, will form no objection to the general doctrine. It is a fact, well attested by observation and experiment, that the absorbents are naturally very active. The known velocity of capillary attraction, (should that be the mode by which the fluid is imbibed,) is equal to the effect; and we might with propriety, adduce the rapid absorption of tears as a striking example. But independent of this consideration, the sudden removal of dropsical effusions will not surprise, when it is recollected how speedily large quantities of water are taken up from the stomach; and how expeditiously smaller collections of lymph or pus are removed from circumscribed cavities, and the cellular membrane, when the action of the exhalents is either suppressed or diverted. Hence the benefit of emetics in these and similar cases; for it is more than improbable that tart. antim. excites the absorbent system in particular, whilst it relaxes the body in general. The irritation it produces, causes a general determination of the humours to the stomach, whilst the nausea it creates, occasions a languor and inaction in the exhalents of the secreting surface; consequently, the absorbents continue unopposed in the removal of what is already deposited.

Pressure is supposed to expedite absorption by some directly accelerating effect; and this opinion is rendered plausible by the advantage which is derived in dropsy from bandages and tight lacing. But the real effect of these applications probably consists in restraining effusion, by resisting the distention of the cells, and impeding the action of the exhalents. Pressure may be so firmly applied as to suppress the action of the exhalents almost entirely, and yet leave the absorbents unobstructed and operative: this is exemplified in the rapid ulceration of the prominent parts of those who are long confined to an horizontal position. Again, a certain degree of pressure may, by supporting the debilitated blood-vessels, relieve the morbid action of the exhalents, and induce a more healthy and vigorous tone in those vessels; on this, the benefit of rollers and adhesive straps in ulcers appears to depend.

These opposite effects of pressure justify the conclusion that it operates by modifying the condition, and varying the action of the blood-vessels; and if this be conceded, the *Uniform* Action of the absorbents, which it necessarily implies, must also be admitted.

ART. VI. *Quarterly Report of Diseases treated at the New-York City Dispensary, to the 15th July, 1828.* By JOHN J. GRAVES, M. D.

THE past season has been one of an almost constant continuance of rain, but it has not been productive of much acute disease. Nothing indeed of much interest has occurred; the most general complaints being chronic affections of the bronchiæ, and rheumatisms of long standing, which were aggravated by the humid state of the atmosphere. Gastric derangement to some extent has in almost all instances accompanied these, and in many cases has given rise to a mild form of ulcerated sore throat. These complaints have been relieved by the free administration of purgatives and emetics, and such other ordinary remedies as seemed particularly to be required.

Ulcerated corneæ, ensuing very rapidly upon an acute form of ophthalmia, have been very prevalent. In most instances this result had taken place before the patient applied for relief. No cause can be assigned for the unusual number of cases which has been met with this season, but there appeared in almost every instance of inflammation of the eye, a peculiar liability to take on this painful form of disease. The general febrile excitement, and the disposition there seemed to be in the ulcer to produce a complete disorganization of the eye, required an active treatment, which consisted in general and local bleeding, and calomel purgatives; and as a local application, the nitrate of silver was chiefly depended upon.

Gastrodynia has not unfrequently been met with. Some few of the cases have been of the severest form, and seemed to bid defiance to every variety of treatment. The greatest

relief we think we have found to be from the application of an antimonial plaister over the epigastrium, and such laxatives as kept the bowels in a soluble state. Nothing gives so much relief during the distressingly painful paroxysm, when the stomach feels as if it were being torn from the body, as a prescription which we have been in the habit of using.* But relief for a short time is almost all that can be expected, a radical cure can scarcely be hoped for, especially when the disease has been of long standing.

Numerous cases of *Intermittents* have been the subject of our care for two or three months past. With but very few exceptions the subjects have been foreigners, who, from labouring on canals in different sections of the country, were afflicted with the same fever during the last autumn. This liability to a return of autumnal agues on the following spring, is a familiar fact, and can only be accounted for by the imperfect cure in the first instance, leaving the system in a state predisposed to give rise to the complaint, when a season shall arrive in which it is common for these organs to suffer from derangement. The early season of the year, characterised as it is by a variable temperature and unsettled state of the weather, is most productive of such derangement, particularly when these viscera have been previously debilitated by disease. From the necessary exposure to cold during the winter, and the consequent contracted state of the capillaries of the surface, a preternatural determination of fluids to the internal organs takes place. This is well known to be the greatest towards those parts which suffer from debility and irritation.

From the comparatively equable state of the surface during this season, the determination to parts is more steadily kept up than it is in the spring, when from the continued atmospherical

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* ℞ Ammoniæ Carb. ℈ij.
Tinct. Cinch. Comp. ℥j.
Sacch. Alb. ℥ij.
Aq. Menth.
Aq. Puræ. aa. ℥ij. M.

vicissitudes, constant changes are taking place in the circulation. It would seem that steady determinations to organs, when not carried to too great an extent, are not as prejudicial to a comparatively healthy state of their functions or structure, as frequent changes in the amount and force of the fluids which they contain. At one time, in such cases they are too highly stimulated, when perhaps at another, they become debilitated from the want of a stimulus, that in a healthy state would be thought too great, but which they become more or less accustomed to. By this irregularity of transfer, the organs are kept in a state of irritability, much greater than if the changes of temperature did not take place, as they do not but in a slight degree during the winter. A steady morbid determination too, may be more easily relieved than when it is variable. A pediluvium, and a bowl of warm tea, will thus dispel symptoms at this season, which may require more active treatment in either spring or autumn. Why after a first attack, the predisposition to an intermittent form of disease particularly, should remain dormant in the system for three, four, and six months, and then re-appear in its original character, after all, can no more be accounted for, than why fever should ever assume this character.

In almost all these cases, there were marked symptoms of extreme hepatic derangement, showing itself in a variety of forms, as icterus, ascites, enlarged liver, constipation, and a general debility. The most of these had been cured when first attacked, by quinine and strongly stimulating drinks; these were administered by friends generally, without reference to the paroxysm or state of the system. After evacuating well the first passages, a full dose of Dover's powder just before the paroxysms, was found sufficient to put a stop to their appearance. A simple infusion of cinchona, gentian, and colombo, was afterwards administered; and for the most part, was found to answer perfectly well in stimulating the impaired secretory functions of the stomach, bowels, &c. to a healthy action, and by that means procuring a healthy digestion, restoring the balance of circulation, and giving strength to the system.

When icterus or ascites were the most prominent disorders, of course some variation in the treatment was required.

Several cases of *petechial typhus* were met with in the months of April and May. In their character they were the same as were occurring at the same time at the Bellevue establishment. Accompanying the usual symptoms, there was one that we have not seen mentioned by authors; it was an inflamed state of the fauces, which in a few days assumed an œdematous appearance, the root of the tongue at the same time becoming swelled and affected with an intense soreness. Stimulating liniments and yeast gargles gave much relief. Blisters to the epigastrium were sometimes found necessary to relieve a dull, oppressive pain, and tenderness in that region. Large doses of calomel frequently repeated, followed occasionally by castor oil, and mucilaginous drinks, were chiefly relied on until a returning healthy state of the skin, and lessened coating of the tongue began to show an altered state of the disordered digestive secretions, when ammonia in excess in the spirits of mindereri, weak infusions of colombo, seneca, and serpentaria in combination, and an occasional purgative, were all that seemed required for a successful termination of the disease.

In the cases that have been seen this season in different parts of the city, no instances, we believe, have been known that will give support to the doctrine of personal contagion in this fever. It is true that several members of the same families, where they occupied the same building, have been affected, but the causes which produced it in the first instance, were capable of producing it in all the others. In one house occupied by four or five families, two in one of them, and three in another, had the fever, but none of the many persons who visited it, nor any of the inhabitants of the neighbourhood, were affected with this or any disease that could be traced to contagion. Upon examination, no cause whatever could be discovered in or about this house for the appearance of the disease, unless an extensive syphilitic ulcer on the skin of a man who afterwards died in the Fever Hospital at Bellevue, as we understand, of this fever, could be called

such. The house was remarkably clean for one occupied by this class of our population, and far worse and more neglected sloughing ulcerations in more filthy, ill-ventilated, and wretched habitations have been seen, but they never, to our knowledge, so infected the atmosphere with an effluvium, capable, by decomposition, of producing a malignant fever, which by virtue of its peculiar properties, could reproduce its like in any number of cases. The fact that we have mentioned may serve, however, as evidence to confirm the belief of those who are of opinion that decomposed human effluvium is the cause of typhus, and that this when it has once taken place, is capable of giving rise to a miasm completely elaborated, and which, from some peculiar combination of its principles, is personally contagious. If human effluvium be the cause, how does it happen that in situations and seasons unfavourable to any such origin, in families and places, when it is impossible in reason even to entertain for a moment a suspicion of this kind; how does it happen, we say, that under such circumstances, typhus even of a malignant character is not unfrequently met with? As to personal contagion, we are skeptical in any thing that has even the shadow of a leaning to such an opinion, and think the doctrine far more untenable, than that of the generally supposed original cause of this fever. We believe, as we have stated in a former paper, that typhus, the remittent and intermittent, are identical, arising originally from the same cause, but assuming their peculiar types in the first instance, with a liability to run indiscriminately in their progress into each or either of the other forms. Since the date of that report, we have had opportunities of conversing with intelligent physicians from different parts of the state, and from the results of the information obtained from them, have seen no reason to alter the opinion then expressed.

Now it seems to be granted even by those who deny this identity, that it is possible for any of the ordinary causes of fever to give rise to specific typhus, and very frequently indeed, to give a typhoid character to any fever from the first, but that this is dependent upon certain circumstances connected with a depressed state of the nervous system. This

concession or modification, affords an argument that leads us to the reasonable conclusion, that this predisposing state is the peculiar one required to give in *every* instance that character to fevers, which makes the only difference in the three forms we have mentioned. The second, or pyrectic stage of an acute paroxysm of intermittent, at the time could scarcely be distinguished from a remittent or typhus in their essential symptoms. There are indeed slight differences, but these do not afford the necessary symptoms which indicate the prominent seats of disorder. And it is as Clutterbuck remarks, "only by observing the termination and recurrence of the paroxysm that the distinction can be made. An identity of symptoms—as he truly says—therefore shows an identity of disease." Now, no man will for a moment attach a contagious character to a remittent or an intermittent, not even, we believe, if they should assume a typhus complexion; and we are not able to perceive any distinction between a fever, whether it be originally a typhus, or whether it begin in either of the other varieties, and terminate in a well characterised form of that fever. The course of the latter, it is true, is different, but after it puts on a certain form, there is really no distinction. Finally, if typhus is in fact personally contagious, and this contagion arises from infectious secretions from the body, some proof should be adduced, capable at least of demonstrating this peculiar decomposition or elaboration of poisonous effluvium from the system; some evidence so conclusive, that a mind open to conviction could not well resist it. But this is not the case, nor will it be, while the circumstances in favour of contagion itself are so deficient in accurate detail, and so capable of being reasoned away, or at least of leaving strong doubts upon the subject.

There is a fact connected with this fever, which we may just mention here, as it is thought to serve in some degree to show the length of time after the cause first affects the system, before it discovers its effects in the peculiar symptoms of the disease. It would seem from some observations made on the Penitentiary fever that prevailed in that establishment, that this interval is two weeks. In 1825, when this fever was

raging there, the convicts were removed *en masse* from the prison, and confined in the hospital. This was done as a preventive in the case of those prisoners who still apparently enjoyed good health ; but more or less of them continued to fall sick for the length of time we have mentioned, after which not a single case we believe occurred. The subjects of disease, it is well known, although they may be equally exposed to the causes, are not alike susceptible to the reception, or rather to the effect of those causes. The powers of the system of one may throw off the miasmatic virus of the atmosphere for a time, and at length become affected, while another will immediately suffer from its poisonous influence. As no new case occurred after two weeks from the period when the prisoners were removed from the pestilential atmosphere of their cells, and of course, from any possible chance of receiving into the system the noxious miasm to which they were then subjected, it was thought to be a fair presumption, that it required that length of time for the cause to operate upon the system before its effects would be shown.

In concluding this report we may here remark, that from the nature of papers of this kind, we are obliged to speak in general terms ; and also, that from the character and habits of the persons who come under our care, the diseases require in most instances, a plan of treatment that may not seem to those who are unacquainted with the circumstance, to be correct practice, or as being applicable to the cases of respectable private patients. The diseases of a large majority of Dispensary patients, are either directly or remotely produced, or in some way affected by the intemperate use of ardent spirits. The influence of such habits, and the consequent misery attendant upon such a course of life, need only to be mentioned, for to most they are well known. But although the plan of treatment may from these circumstances be somewhat peculiar, still the principles of medical practice, if correct, we conceive are always the same ; but observation and judgment are necessary to make a right application of them, and so to modify our treatment of diseases, that it may be suited to the cases before us, governed as they may be by

idiosyncrasies, temperaments, habits, and local peculiarities. There is no such thing as invariable rules in practice. How can there be, when no two cases are exactly alike? Many symptoms are as peculiar as the constitutions of men are dissimilar, and even where there appears to be the greatest similarity, there are shades of difference which, as they are by close examination capable of being distinguished, may arise from causes that require a mode of treatment, that at first could not have been anticipated. If then we do not sufficiently particularize, it is because we can here only give sketches of what falls under our notice, leaving the outline to be filled up by the good sense and discrimination of others.

ART. VII. *Case of Tetanus successfully treated.* By GEO. REIDENAUR, M. D. of Lebanon, Penn.

C. K. ætat. 14, a servant of Mr. J. B. residing about two miles from this place, in August last, while overheated, imprudently went into the cellar and remained there several hours, with a view, as she said, of cooling herself.

A few days after she complained of a rigidity of the muscles of the superior and inferior extremities, a sense of uneasiness about the root of the tongue, and a stiffness about the back part of the neck, together with a difficulty of swallowing, and some febrile excitement. In short, every organ of voluntary motion appeared to have suffered more or less, and the muscles of the lower jaw became so rigidly contracted as unequivocally to characterise *trismus*.

An *empiric* was now desired to visit her, who pronounced it a very *anomalous* affection, and prescribed his usual *balsamic remedies*. He continued to attend her for ten or twelve days, when owing to the interposition of her friends, I was requested to see her. When I first saw her, the rigidity of the muscles of her body was such, that she could not bend herself in any direction, but was perfectly stiff, and her jaws were so firmly locked, that she was then, and had been for nearly a week, unable to take even liquid nourishment.

For several days before I was called, she had been repeatedly seized with convulsions of the *opisthotonos* kind, which had drawn her body backwards in such a manner that it was supported by the head and heels.

The spasms were unattended with violent pain, and generally continued for several minutes, and returned at intervals of about half an hour, during which her countenance was hideously distorted, her respiration hurried, and her pulse contracted and irregular.

From her emaciation and debility being great, I ordered Madeira wine to be plentifully given her, and prescribed dram doses every two hours of equal parts of tinctura opii and spts. terebinth. Upon my next visit I had the pleasure of finding a considerable abatement in the symptoms. She could open her mouth near half an inch, and complained of no pain, and could take some spoon victuals. She took near two quarts of wine in twenty-four hours, which was conveyed into her stomach through the aperture by the loss of two of her teeth.

By a rigid perseverance of the remedies for better than a month, the spasms entirely left her, and she was gradually restored, by the use of *tonics* and a nourishing diet, to her wonted health.

ART. VIII. *Cases illustrating the Effects of Ergot in Menorrhagia.* By JOHN B. MISH, M. D. of Lebanon, Penn.

ALTHOUGH great diversity of opinion exists as to the powers of the *ergot* in parturition—some highly extolling it, others considering it perfectly useless, and there are even some who deprecate its employment, and go so far as to pronounce it the *pulvis ad mortem*—yet we believe it is now generally conceded, that when timely and judiciously administered, it is one of our most important therapeutical agents, not only in expediting labour, but also in restraining hemorrhagies from the uterus.

Having derived essential benefit from it in *menorrhagia*, I shall relate the following cases of the many in which I have witnessed it, to fulfil the indication for which it was prescribed.

Case 1.—In the month of March 1826, I was desired to visit Mrs. E. C. residing about five miles from this place, who, upon inquiry, I found had been subject to menorrhagia for some time, and that in her present attack a practitioner in her neighbourhood had unavailingly tried the usual remedies, together with the *tampon*. As the discharge continued to be profuse, and as debility was considerable, I conceived it a favourable case for the trial of the secale cornutum. I accordingly left eight powders, each containing five grains, with directions that one should be given every hour. Upon my next visit I was assured that she had not taken the first powder thirty minutes before the discharge had been partially arrested, and that after using the others it had entirely ceased. She has since had several slight attacks, but invariably found relief by taking grain doses of the secale in the form of pills, three or four in a day. Her health is now perfectly re-established, which had suffered much from menorrhagia for several years.

Case 2.—Miss M. L. was, on the 3d day of May last, attacked with menorrhagia, and as the discharge, although profuse, was permitted to be unchecked, owing to the superstitious opinion imbibed by her mother that serious consequences would result if remedies should be resorted to for the purpose of restraining it, until her debility became so alarmingly great that I was requested to visit her. When I saw her, I found her strength greatly prostrated, her respiration difficult, her extremities cold, and her pulse small and very weak. Having taken some powders of ergot with me, I left six of five grains each, which I ordered to be taken every hour. After the third was administered, the discharge was checked; and with a view of preventing a recurrence, I directed the remaining powders to be given that day. Since then she has been regular, both as to time and quantity, in her menstrual periods, and has enjoyed good health.

ART. IX. *Supplement to the account of some of the Lunatic Asylums of the United States.* By T. ROMEYN BECK, M.D.

AFTER the paper on this subject had passed through the press, we received from Dr. Todd, through the kind offices of Dr. Tully, of Albany, the reports (in manuscript) for the second and fourth years of the CONNECTICUT LUNATIC ASYLUM. The following abstract is taken from them, and we have also added such corrections to the statements on pages 195, 196, and 197, as are rendered necessary by the additional returns.

Admitted.	*Males.*	*Females.*	*Total.*
2nd year ending April 1, 1826.			36
4th year ending April 1, 1828.	18	22	40
Total admitted from April 1, 1824, to April 1, 1828.			157

Age.	10 to 20	20 to 30	30 to 40	40 to 50	50 to 60	60 to 70	Total.
2nd year not specified 4th year	3	9	16	9	2	1	40

Species of Insanity.

2nd year not specified.

4th year.

Mania exultans,	9	Melancholia attonita	3
despondens	7	complacens	3
ferox	6	despondens	1
demens	2	errabunda	1
imbecilis	5	Idiotism	2
e potu	1		—
			40

Causes.

4th year.

Hereditary,	4
Constitutional,	2
Predisposition excited by various causes,	4
Congenital, (Idiotism)	1
Bodily disease,	1
Hepatic Disease,	2
Following typhus,	1
Structural disease of the brain,	2
Puerperal,	1
Religious anxiety, or exultation,	4
Excessive mental application,	2
Domestic troubles,	3
Death of friends,	1
Failure in business,	3
Intemperance,	4
Jealousy,	1
Disappointed affection,	1
Excessive excitation on a return from a long voyage,	1
Unknown,	2
	40

Results of treatment. For the sake of presenting this clearly, we shall give the returns of each year.

	Recent Cases.	*Chronic Cases.*	*Total.*
Admitted 1st Year,	12	32	44
2nd Year,	16	20	36
3d Year,	23	14	37
4th Year,	26	14	40
	77	80	157

	RECENT CASES.							CHRONIC CASES.						
	DISCHARGED.							DISCHARGED.						
	Recovered.	*Much Improved.*	*Improved.*	*Unimproved.*	*Died.*	*Total.*	*Remaining.*	*Recovered.*	*Much Improved.*	*Improved.*	*Unimproved.*	*Died.*	*Total.*	*Remaining.*
1st Year	5	2		1		8	4		7	3	1	1	12	20
2nd Year,	12	1	1		1	15	5	2	4	7	7		20	20
3d Year,	25	1				26	2	4	5	5	4		18	16
4th Year,	21			1	1	23	5	3	3		1	3	10	20
	63	4	1	2	2	72	5	9	19	15	13	4	60	20

Admitted during the four years ending April 1, 1828, 157

Of which,

Recovered	72	
Much improved,	23	
Improved,	16	
Unimproved,	15	
Died,	6	132
Remaining April 1, 1828.		25
		157

		Recovered.	*Centesimal proportion.*
Whole number admitted,	157	72	45·86
Recent cases,	77	63	81·81
Chronic cases,	80	9	11·25

The comparative success of each year will be seen in its table, and in particular, the great success in recent cases during the third year. It is notwithstanding greater in the fourth, (being as 91 to 91$\frac{1}{3}$) from the following circumstance mentioned in the report. "Five of the recent cases have been admitted only within 14 days, and cannot be properly

considered in any estimate of the proportion of recoveries." This leaves, of those remaining from the third year and admitted during the fourth 23, of which 21 were cured.

As to the chronic cases, Dr. Todd remarks, "the institution is thronged with incurable patients, who after all attempts for their restoration have been baffled, and all hope of recovery extinguished, are placed there by their friends, solely with a view to their comfort and safety. This forlorn and irremediable class of patients, has constituted during the past year, two thirds of the whole number of our chronic cases, leaving only ten out of thirty cases, which could with any propriety be ranked among the subjects of curative treatment. Three out of the ten have recovered, affording a ratio of recovery, equivalent *to thirty per centum.*" During the third year, making a similar allowance for incurable patients, the ratio was twenty-six per centum.

T. R. B.

REVIEW.

ART. I. *Pathological Anatomy. The last course of* XAVIER BICHAT, *from an autographic manuscript of P. A. Béclard; with an account of the life and writings of* BICHAT. By F. G. BOISSEAU, member of the Royal Academies of Medicine of Paris and Madrid, of the Medical Society of Emulation &c. Translated from the French by JOSEPH TOGNO, Student of Medicine. Philadelphia, 1827. 8vo. pp. 232.

2. *Manuel of Pathology, containing the symptoms, diagnosis and morbid characters of diseases; together with an exposition of the different methods of examination, applicable to affections of the head, chest, and abdomen.* By L. MARTINET, D. M. P. Resident Physician of the Hotel Dieu. Translated, with notes and additions. By JONES QUAIN, A. B. Demonstrator of Anatomy at the Medical School, Aldersgate-street. Philadelphia, 1827. pp. 301.

THE life of Bichat forms a memorable era in the history of medicine. Though not without defects, his works must ever be ranked among the noblest productions of the human mind. As specimens of natural science, his *General Anatomy*, and *Researches on Life and Death*, are unquestionably unrivalled in richness of facts, felicity of detail, and originality of generalization. Bichat fortunately lived at a period the most auspicious for the successful exertion of his superior talents. Anatomy, at that time, presented a vast accumulation of materials, roughly cast together, and waiting the hand of a master to mould them into a symmetrical form. The genius of Bichat was happily adapted to this work; and it is due to

his fame to confess, that he more than accomplished it. Indeed, in respect to extent of original and valuable research, how few, very few, have equalled him? Anterior to Harvey, Bonetus, and Sydenham, there is scarcely one whose name is worthy of being mentioned. Of those that flourished in the latter part of the seventeenth and in the course of the eighteenth century, who, but Morgagni, Baglivi, Hoffmann, Hunter, Haller, Bordeu, Pinel, and one or two others, can be said to have materially contributed to establish physiology and pathology upon a solid and enduring basis? Even these, great and invaluable as were their services, were but pioneers in the march of science, preparing the way for him, whose glory it was to illustrate the commencement of the present age, by unfolding, in a manner entirely original, the intimate structure, properties, and functions of the primary tissues of the human body, and classifying them according to their analogies. In thus creating *General Anatomy*, Bichat gave to medicine a character approaching somewhat to that of an exact science. The influence of his writings is, at present, every where seen; and we do not perhaps deviate from the truth in saying, that the principal improvements made in pathology within the last twenty-five years, have resulted from inquiries pursued according to his method of investigating the phenomena of the body in health and disease.

Although the works of Bichat, published during his life, contain numerous references to the changes produced by disease in the different organs and textures of the body, it is only in the volume before us that we are presented with a connected view of his researches into pathological anatomy. The reader will peruse in this work, to use the language of Boisseau, many ideas which have become a kind of public property, and the originality of which is given to others, not to Bichat.

We are told, in an advertisement, by the Editor, Bailliere, that at the sale of the library of Béclard, he became the possessor of a manuscript written in his own hand, of the last course of Bichat's lectures, and that he consulted with several

enlightened physicians with respect to its publication. They all concurred in the opinion that the smallest part of the doctrines of a man who had rendered such eminent services to science and humanity, should be collected with religious care; that the public would eagerly seek the completion of a course of lectures, during the delivery of which Bichat spent the last hours of his valuable life; and lastly, that it would be a supplement full of interest to all the editions of his writings. These considerations determined Bailliere to present the work to the public, and for which he is entitled to the salutations of the profession.

It is not our intention to enter into a critical examination, or extentive analysis of this interesting volume. In fact, the matter contained in it does not admit of being reduced to an abstract sufficiently brief for publication in this journal. The most we can do is, to present our readers with a general idea of its contents, and to give a few specimens of the manner in which the subjects are treated.

The work opens with a discourse strictly introductory, in which, after stating the objects of medicine, and the mode in which diseases admit of being divided into natural classes, a rapid view is taken of the leading pathological doctrines which have prevailed from Hippocrates to the close of the eighteenth century. The author justly remarks, that we may distinguish two classes of physicians; those who have only observed, and those who to observation have added post mortem examinations. The former are very numerous, the latter are confined to a very small number, and are only to be met with in the last, and we may add, in the present century. The practical bearing of this truth on the interests of humanity, is too obvious to be mentioned. The distinction alluded to, however, will continue so long as the indolence of physicians and the prejudices of the world are opposed to the dissection of the dead. But these obstacles to the advancement of our art it is hoped will one day be for ever removed.

The body of the work is divided into chapters, and these again into articles treating of particular subjects. In the first chapter the author confines himself to some general obser-

vations on autopsic examinations. He especially adverts to the lesions of organs produced by different diseases, and also to the several modes in which life is extinguished.

Among the appearances observed on dissection, he mentions one which is worthy of particular notice. He says, "*if a patient dies in a syncope, no traces of blood are to be found in the brain.*" If such be the fact, and who can doubt it, when coming from such authority, what are we to think of the hypothesis of some physiologists, that the quantity of blood in the brain, in its ordinary state in life and death, is never increased or diminished, but always the same; owing, 1st, to the bony case of the head being unalterable in its dimensions, and 2d, to the incompressibility of the brain and blood? That nature has carefully provided against the occurrence of a vacuum in the cranial cavity, under every circumstance that can possibly happen, no one will question. If the brain always occupy the same space, or, in other words, be absolutely or inappreciably incompressible, as it is said has been proved by experiment, it is obvious that the quantity of blood in the brain can never vary, it must be the same, whether the patient die of syncope or apoplexy. Now the appearance of the brain after death from syncope, as stated by Bichat, is directly the reverse of that which every anatomist has seen after death from apoplexy; and hence it may be asked, how it happens that in the former case, the brain appears exsangueous, whilst in the latter, to say nothing of the deposits of blood from extravasation, its membranes and substance appear excessively engorged?

The second and third chapters are devoted to the consideration of the order to be followed in pathological anatomy, and to the alterations of the fluids. In treating of the fluids, the author, in order to facilitate his enquiries, divides them into two classes, 1st, those which exist in a normal state, and 2d, those which are found in a pathological state. The fluids which exist in the natural state he divides into three kinds, the *circulating*, the *secreted*, and the *exhaled*. His views of the pathology of the circulating fluids are stated in the following terms:

"Nothing as yet, very general, can be said on the changes of the nature of the blood in diseases; on this subject we are confined to a few facts. All diseases marked by strength, such as inflammation, present in the blood which is drawn during life, a buffy fibrous coat, called pleuritic. We know that physicians who have admitted the thickening of the blood, have made use of this coat to explain the diverse phenomena; but the part they have caused it to act is entirely illusory. It is only formed when the blood is out of its vessels. However, it seems often that the blood participates in the malady without our knowing precisely its mode of influence. In all protracted diseases, the blood loses, in part, its coagulating property and assumes opposite characters. In putrid fevers does it putrefy in reality? Authors have exaggerated respecting this; but the prostration of strength, the facility with which the cadaver putrefies in these diseases, every thing seems to prove that the putrefying principle has passed even into the blood. It is also evident that in local affections, the humours have a tendency to putrefy before the death of the solids. In the inflammation which terminates in gangrene, ordinarily the fetid smell is exhaled before the solids are in a state of mortification.

"As to the other alterations of the blood, there are many which it would be difficult to classify under any general heads. In jaundice the blood takes on a yellowish colour. In general, in all diseases it is the blood which colours the lips and cheeks, in a peculiar manner for each of them, and which enables us often to recognise them.

"From all this we must conclude that the fluids almost always participate in the diseases of the solids. The general *consensus*, which seems to be wanting in certain cases, would suffice to make us think so. As to the other circulating fluids, they also most probably are altered, but we know less about them."—pp. 24, 25.

The subject of the fourth chapter is inflammation. Under this head Bichat first adverts to the different organizations of different parts of the body, and afterwards gives a general description of phlogosis, the characters of which he says vary according to two principal circumstances; 1st, according to the diseases with which it is complicated, and 2d, according to the system or tissue in which it is located. Though these circumstances were noticed, in a general way, by Hunter and Pinel, it is chiefly to the researches of Bichat, we are indebted for the facilities which have enabled us to extend and systematise our knowledge of the modifications of inflammations.

The remaining chapters of the work relate to the pa-

thological anatomy of the elementary textures, of which the body is composed. These textures, excepting those which compose the substance of the lungs, are generalized, for the most part, in the same manner as we find them in the author's General Anatomy, being comprised in the following systems, viz. the serous, mucous, cellular, glandular, cutaneous, muscular, arterial, venous, nervous, absorbent, fibrous, synovial, cartilaginous, medullary, osseous, pilous, and epidermoid.

In treating of these systems, the author points out the idiopathic and sympathetic disorders to which they are subject, enumerates the diverse morbid phenomena which occur in different parts of the same system, and exhibits the anatomical changes produced in each by disease.

A few extracts from the body of the work will exemplify the manner in which the several subjects are treated. The author begins with the serous system which, as is well known, is composed of a certain number of membranes that cover the exterior of several organs. Speaking of the inflammation of these membranes, he observes:

"Few systems, if we except the mucous and the cellular, are oftener inflamed than the serous; but all the membranes which compose this system are not equally susceptible of it; the following is their order in this respect: 1st, the pleura, 2d, the peritoneum, 3d, the pericardium, 4th, the tunica vaginalis, and lastly, the least frequent of all, the arachnoid.

"Here, the causes of inflammation are extremely varied: in general, we shall never pay any attention to remote causes; among the proximate ones is particularly the suppression of transpiration; this is especially the case with regard to the pleura and the peritoneum. These causes act, not on the affected membrane, but on the neighbouring organs. When the disease is developed, these are the characters which distinguish it: at first it is accompanied with all the general phenomena; fever, chills, sweating; in general, it is singularly variable. A very sudden attack is manifested by an excessive pain of the part, as we see in pleurisy. In no system is the pain more keen; the stages succeed each other with an astonishing rapidity; in three or four days the disease is determined: moreover, the concomitant fever, which is slight in the affections of other parts, is here very intense, and the danger is always more manifest. This inflammation influences also the condition of the organs which it covers; besides, these symptoms vary singularly."—p. 37.

Bichat thinks it is difficult to determine the condition of the inflamed serous membranes during life. Nevertheless, he says, in the operation of hernia, and in certain experiments on dogs, the peritoneum has been observed in a state of inflammation; it was then extremely red. On the subject of adhesions of the serous surfaces, he makes the following observations.

"Inflammation in this system, as in every other part of the body, goes through the same series of stages, if we except adhesion, which exclusively belongs to it. This phenomena has without doubt its origin in the serous membranes, from the suppression for a considerable time, of the fluid which was exhaled before, caused by the inflammation which permits the two surfaces of the membranes to contract adhesions. This termination accompanies always those by resolution. These adhesions are of two kinds: some have for means of union a species of albuminous matter, in the form of a false membrane; the adhesions, properly so called, are those in which the two membranes seem to blend themselves at their surfaces.

"All serous membranes are not equally susceptible of this adhesion. The pleura presents this phenomena in two thirds of the cadavers examined in the dissecting rooms. Next in order comes the peritoneum, which sometimes adheres to the diaphragm and to the liver, seldom to the intestines; then follows successively the pericardium, the tunica vaginalis, and the arachnoid.

"We see by this gradation, that those which are most susceptible of inflamation present, most commonly, adhesions. These are of four kinds; in the first, the two parts are so very intimately united that we cannot distinguish them. The pericardium having been found in this state, has caused doubts to arise about its existence. In the second species, the membranes are united in a more loose manner; in the third, there are a multitude of small fibrous prolongations, which extend from one surface to the other. In the fourth, there are also bands, but larger, flat, and disposed in such a manner, that one would think them natural. Can we ascertain during life these kinds of adhesions? Writers have described as a sign the constancy of the pain; but this only indicates the remainder of inflammation, which lasts more or less time. Besides, this affection is oftentimes without danger."—pp. 38.

Among the terminations of *acute* inflammation of the serous membranes, the author particularly notices chronic inflammation. The relation of this form of disease to dropsies is thus commented upon.

"Moreover, the effects of these slow inflammations in the serous membranes, are, an obscure pain and analogous symptoms which often deceive

us in regard to their true nature, because formerly physicians attended only to the dropsy they produced. There is always more or less derangement in the organs which they cover. A remarkable effect of these inflammations, is a real dropsy augmented by exhalation. When these dropsies have reached their last period, it is often difficult to perceive whence they proceed, and to decide whether they are produced by the affection of a neighbouring organ, or by that of the membrane itself. We must have recourse to the preceding circumstances; for, symptomatic dropsy begins very differently from the idiopathic. Besides, as we have already observed, almost always in that dropsy which depends on the organs, the cellular tissue is infiltrated, whilst in the other, the serosity is confined to the cavity of the membrane. It is the same thing with respect to the encysted dropsies."—p. 40.

The pathological anatomy of the *mucous* system, occupies a considerable part of the present work. This system, extending throughout the hollow organs which have external openings, forms a very important part of the economy, and is exceedingly liable to disease. The affection to which it is most subject is inflammation. On this subject Bichat observes:

"The distinctive characters of the mucous inflammations, first depend on the manner they begin, and their close relation to the different states of the skin. They are almost always produced by sudden changes of the atmosphere; hence, colds or catarrhs, coryzæ, &c. This close sympathy is equally evident in other mucous affections. Indeed, we know that a cold application on the temples stops a nasal hemorrhage.

"Another character of the mucous phlegmasiæ, is their prevailing frequently as epidemic diseases. A multitude of authors have spoken of it. This is particularly the case in dysentery. This character causes these inflammations to differ essentially from the serous phlegmasiæ, and from those of all the other systems. Indeed no mention has ever been made of epidemic of phlegmon, erysipelas, &c.

"The pain in these inflammations is generally less intense than that in all others. In coryzæ there is only obstruction. Another character is that they are almost always unaccompanied with that swelling of the neighbouring cellular tissue, which we observe in other phlegmasiæ. In dysentery the abdomen is never distended as in enteritis. As to redness, it cannot be determined, since, in a normal state, it varies according to the condition in which the mucous membranes are found. However, it seems that this redness is always augmented. One can judge of it by analogy from the inflammations of the mouth. Seldom is there any concomitant

fever; and, should it exist, it is never very intense. Moreover, mucous phlegmasiæ can be complicated with all the maladies of which we have spoken in the articles of complications of the diseases of the serous membranes."—p. 62.

Few subjects have been more happily elucidated by Bichat than hemorrhages. He regards them as generally produced by exhalation.

"All physicians, till now, had considered them in too abstracted a manner, without observing that, what is true with regard to hemorrhage of one part, is not so with respect to that of another. All the ideas of the mechanicians, who have explained hemorrhages by obstruction, have been overturned by Stahl, who has considered matter in a manner too abstracted and metaphysical.

"We shall classify the hemorrhages of the mucous membranes according to the parts in which they occur: however, they are divided into two distinct classes; namely, those from rupture, and those from exhalation.

"Hemorrhages by exhalation may happen wherever exhalants terminate; and indeed they have their seat in mucous surfaces. The nasal passages, bronchiæ, stomach, intestines, bladder, &c. may be the seat of them. They sometimes happen also in the serous membranes; for we sometimes find a bloody serosity in the peritoneal cavity in certain cadavers. We meet with them also in the cellular tissue; such are those which produce scorbutic spots. Those of the skin are of a rare occurrence, but not without example. Finally, glands have often been observed to exhale blood.

"Hemorrhages by exhalation, in the mucous membranes, as elsewhere, are of two species, passive and active. They are active when they are accompanied with developement of the vital forces; thus they have this character in the nasal passages, when we remark a tickling sensation, together with a slight pain and redness. At other times they are utterly passive, as when they are met with at the close of some organic affection characterized by debility.

"As to the state of the parts, after death, in which hemorrhage takes place, it does not differ from the natural condition, as it is seen in the matrix, in females dead soon after menstruation."—64.

The particular affections of the mucous system are treated of under the several heads of aphthæ, fungi, diseases of the conjunctiva, pituitary membrane, mucous membrane of the mouth, pharynx, larynx, bronchiæ, œsophagus, stomach, intestines, glans penis, urethra, vagina, womb and bladder.

Though more ample details on these subjects may be found in the works of the pathologists of the present day, yet no one can read the volume under review, without perceiving that much of that which is claimed by them as original, was publicly taught by Bichat.

The *cellular* tissue, which fills up the interstices between the other textures of the body, is considered by the author under the relation of the diseases to which it is subject. He says:

"These diseases may be classified under three heads: some, idiopathic, arise there spontaneously, and run through all their periods, as phlegmon; some others depend only upon the continuity of this tissue with some primitively diseased structure, as cancer; finally others, are purely symptomatic, as leucophlegmasia, which is produced by an organic derangement. This distinction is real, and may be recognised even at the bedside of the patient."—p. 100.

With regard to the adipose deposits in the cellular membrane, the following are the views of the author.

"Fat may be abundant or may be wanting. In the first case, there is an appearance of plumpness. When this *embonpoint* is not very considerable, far from constituting a disease, it is on the contrary a sign of health. Sometimes the fat accumulates in so great a quantity that, indeed, it produces a true pathological condition; but still there exists this difference between this latter state and anasarca, that excessive fatness does not kill the patient; but denotes only feebleness, little activity when in motion, and sometimes exhaustion, as we observe in eunuchs. This embonpoint is developed when favoured by certain circumstances; it is often observed to occur from the age of forty to fifty, and also, generally in those persons who lead a sedentary life, and who are fond of good living. The abdomen is particularly the seat of this accumulation of fat, which occurs sometimes in its cavity, and sometimes on its parietes. This condition has never been observed to coincide with an organic affection. The other parts of the body, besides the abdomen, may also become loaded with fat, such as the neck, thorax, and extremities.

"Sometimes fat disappears from the economy. A moderate leanness never constitutes a morbid condition. Nevertheless, if it coincide with a state of feebleness, then it is ordinarily the symptom of an organic disorder, especially in the lungs. This leanness may also supervene upon sad passions; but does it then depend on an immediate affection of the cellular tissue? It is more probable that it succeeds some organic alteration.

Violent exercise, change of air, want of nourishment, are so many causes which produce leanness. Sometimes leucophlegmasia is added to the emaciation."—p. 109.

In the chapter on pulmonary diseases, the author makes the following interesting remarks on asphyxia.

"*Asphyxiæ* may be referred to the chapter on the diseases of the lungs. We divide them into two general classes: 1st, those caused by simple deprivation of air which takes place in a vacuum, by strangulation, by submersion, &c. And 2d, those which are produced by deleterious gases, as azote, hydrogen, exhalations from privies, as well the vapour of charcoal.

"Drowning presents the following phenomena: the lungs are more or less gorged with blood; the bronchiæ contain ordinarily a little water, we meet at the same time with a great deal of mucus; we also sometimes find foreign bodies, such as gravel. The heart is very much dilated on the right side; the veins are gorged with a quantity of blood, which we find also abundant in the arteries; the heat disappears suddenly, which distinguishes this kind of asphyxia from all others. In general, the difference in the cooling of divers cadavers is always to be ascribed to the kind of death, and consequently we should be on our guard never to decide too hastily on the period at which the patient has expired. As to the state of the capillary system in drowning; on the external surface it is very much loaded with blood, particularly on the superior parts which are quite black, whilst the inferior extremities are very little coloured. This condition, especially of the face, agrees very well with the facility with which these same little vessels retain the red blood whilst alive. The brain presents also vessels very much engorged; as to its substance, it is in its ordinary condition.

"Strangulation presents nearly the same disposition. Nevertheless the lungs are less engorged because the air has been suddenly stopped, but the veins and the arteries are full; there is often erection of the penis, without our knowing why.

"In asphyxia produced by charcoal, the lungs are more or less engorged. If the death has been slow, they are very much so; and if it is sudden, very little. The heart and blood-vessels are very full. At the same time that it is abundant, the blood is always liquid. Heat is preserved for a long time in this kind of asphyxia; but the fluidity of the blood is kept up long after the heat has escaped. The limbs may be bent with the greatest facility, which is not the case with the other kinds of deaths, in which state much strength is required to bend them. The superior parts are somewhat livid; there is a peculiar vivacity of the eyes.

"As to the other kinds of asphyxia produced by deleterious gases, death in them is so sudden, that the lungs are very little engorged with blood: only few autopsic examinations have been as yet made relative to this kind of death."—*Bichat*, pp. 129, 30.

The work of Martinet, which we have associated with that of Bichat for the purpose of review, is an exceedingly valuable manual of pathology. It is divided into two parts. The first, which is intended by the author as a clinical guide, contains a brief statement of the necessary requisites for the proper conduct of clinical pursuits; and a detailed account of the improvements, which, of late years have been introduced in the methods of investigating the diseases of the three great cavities of the human body. In the second part, care has been taken, says the author, to give in a condensed, yet complete form, every thing that is necessary to enable the observer to distinguish diseases from one another, and if necessary, to draw up with precision the history of them; to this is subjoined an enumeration of the symptoms of the different affections, and the morbid alterations which they induce. The office, which the author has for some years filled at the Hotel Dieu, has, he remarks, afforded him abundant opportunities of verifying, by actual observation, the truth of his statements. The work is, in a word, a systematic complication, made up of the author's own observations and the valuable researches of Laennec, Andral, Lallemand, Serres, Louis, Broussais, Rostan, Bertin, Chomel, Double, Landre-Beauvais, Recamier and others.

Though our limits do not allow us to give a full analysis of this work, we cannot forego the opportunity of transferring to our pages a few paragraphs illustrative of its character and value.

The first part commences with an exposition of the various methods of examination used in medicine. The general method applicable to all diseases is laid down by the author with great precision. He observes:

"It will here be asked, what course should be pursued in the conduct of our researches? Can we adhere to any fixed and uniform plan? Certainly not. For how could the same method of investigation be made to apply to diseases whose seat and nature are totally different? Would it not be absurd, when examining a case of effusion into the brain, to proceed in the same way as if the effusion were seated in the thorax? And what resemblance can there be between the questions addressed to a person with

malignant pustule, and one labouring under scirrhus of the stomach? Surely the means of ascertaining the difference between small-pox and varicella—between hydrophobia and certain nervous affections which stimulate it, must be very different from those adopted, when we want to distinguish mania from arachnitis, inflammation of the stomach from peritonitis, or gout from articular rheumatism. For it would evidently be irrational to pursue the same routine of examination in diseases, so totally different in their seat, nature, and character.

"Our methods of examination then should partake of all that precision which marks the improved pathology of the present day; and though they may not be directed in every case to each viscus and tissue, they should invariably be directed to explore each of the great cavities, where the vicinity of the contained viscera, and their numerous sympathetic relations constitute so many fertile sources of error."—*Martinet*, p. 16.

The following preparatory examination, which we are told is that usually pursued at the Hotel Dieu, enables the physician to curtail much labour, and so to direct his questions, as to ascertain with precision the seat and nature of the disease under consideration.

"*Preparatory Examination.*—Whilst examining the general appearance of the patient, and the expression of his countenance, the observer should at the same time ascertain the state of his tongue and pulse, should see the expectoration, if there be any, make him respire, and ask whether he feels pain in any particular part, and if he does, what has been its duration.

"In this way, which is particularly useful in acute cases, a skilful person passes rapidly in review the principal functions of the system, and obtains some idea of the state of the organs contained in the three great cavities, which are generally the seat of all serious diseases. The countenance and general appearance are good indices of the state of the intellectual and muscular systems, the tongue and mouth mark that of the digestive organs, and the pulse indicates either the direct derangement of the organs of circulation, or their connection with the disturbance of others.—The expectoration, respiration, and voice mark the state of the lungs and their appendages, whilst the seat of the pain, of which the patient complains, and the time it has lasted, cast additional light on the information obtained by the previous inquiries.

"The observer is still far from having ascertained the precise character of the lesion he is examining, but by means of the distinguishing signs of the diseases of the principal cavities, he will, in the first place, be able to determine whether the affection be acute or chronic; and in the next, by following the plan of examination we are now about to detail, he will learn

how to give to his questions that degree of precision which is necessary for strict diagnosis and accurate description. By these means may be avoided that oversight so commonly committed in elementary works, namely, of supposing that to be known which is unknown, and of sending the reader to the perusal of a case, of which he as yet knows not even the denomination.

"When commencing to take down a case, first note the name, sex, age, and occupation of the patient; this should be done according to the form above given. In some cases it becomes necessary to state the country or district from which the patient comes, and the diseases which prevail there. For example, many cases of intermittent fevers found in Paris, got the infection elsewhere, which ought to be noted.

"In general, it is advisable to collect the principal facts and circumstances of the case in the presence of those in attendance on the patient; it tends much to inspire confidence. In hospitals, pupils should avoid fatiguing those unhappy persons whom misfortune compels to take shelter in such asylums; and when they are seized by any dangerous disorder, surely their own feelings should teach them, that it is worse than inconsiderate to repeat the same questions many times over, and often without any determinate object.

"The time of making the explanation is not altogether a matter of indifference. When it is intended to put a number of questions, and enter into all the details necessary for a complete narrative, it is advisable to do so during the period of the remission, as then the patient can better bear the fatigue and exertion of conversation. But when on the contrary, we wish to observe the symptoms presented by the disease, and the changes induced in the functions, in a word, the actual state of the patient; then it is better to choose the moment of exacerbation, as all the symptoms are more strongly marked, and their relative importance can be more easily assigned.

"The acute and chronic forms of disease require a plan of examination and narration altogether different. Every thing connected with the previous history should be known, and stated fully in chronic cases; it is the only means of throwing any light on the obscurity which so generally surrounds them. But in acute cases this is far less necessary: it is of very little use, when considering a case of arachnitis, or pericarditis, or when giving its history, to go back to any previous affections of the patient, or inquire what has been his usual manner of living, or what influence any particular agent may have exerted upon him. When the symptoms are urgent, our object is to ascertain speedily the nature and extent of the disease, and meet it by an energetic plan of treatment. Though this principle is true as to the treatment, it is not strictly so with regard to the prognosis, which must be modified by the existence of any particular organic disease, or hereditary predisposition, known to exist in the individual himself, or in his family.

"After having examined the different parts of the body, in order to ascertain its external conformation, and any malformations it may present,

the existence of which might lead us to suspect others deeply seated; after having ascertained whether there be any venereal or scrofulous cicatrices, which may throw some light on the present affection, the history should then be entered on in full detail, which will be found useful, particularly in consultations."—pp. 17–20.

After stating the various inquiries necessary to be made in studying the history of diseases in general, the author enters upon the method of examination applicable to diseases of the head. In treating this subject he considers in detail the state of the intellectual faculties, sensitive system, locomotive system, digestive system, respiratory system, and circulating system.

He next proceeds to the method of examination applicable to diseases of the thorax. Under this head, he says, that after examining the external conformation of the chest, and inquiring whether pain is felt in any particular part, we should investigate the phenomena which result; 1st, from the act of respiration; 2d, those that depend upon the voice; 3d, the product of expectoration; 4th, the symptoms given by percussion; and 5th, those which are referrible to the heart and its connections. Martinet has rendered this part of his work especially interesting, by giving a plain and definite account of auscultation, mediate and immediate. After fully considering the method of studying the diagnosis of thoracic diseases, he thus recapitulates the principal points to which the physician should direct his attention.

"He should begin with examining the expectoration, as being of considerable value in distinguishing diseases of the chest. If limpid and viscid, it indicates acute catarrh; if, after presenting this appearance, it becomes opaque, yellow, greenish or puriform, it marks chronic catarrh; if it adheres firmly to the vessel in which it is received, and is more or less tinged with blood, it anounces pneumonia; if round and opaque, masses float in a quantity of frothy fluid; or if they are puriform, and streaked with white lines, and containing small white masses insoluble in water, we conclude that they are produced in a tubercular excavation. If the expectoration is fluid, purulent, and suddenly coughed up in great quantity, it should make us presume, that a fluid contained in the pleura, has made its way through the bronchi, and so is evacuated. When pieces of false membrane are expectorated, they are recognised at once as the product

of croup; and a dark green fluid, exhaling a fetid smell, marks gangrene of the lungs. In hæmoptysis, bright red and frothy blood is expectorated; this should not be confounded with that which occurs in hæmatemesis, or with the bleeding which occasionally comes from the gums or the nares.

"The effects of percussion should next be attended to, as they tend to direct the observer in the examination he is about to make with the assistance of the stethoscope. It should not be forgotten that, even in health, there are some parts of the chest which give a dull sound, as for instance the region of the heart, and the lower part of the right side; there are others in which the sound is heightened, as the lower part of the left side. Percussion indicates the parts in which the sound has become more dull and those in which it is more clear than natural; diminution and absence of the natural sound, characterize pneumonia,—accidental tissues developed in the lung or cavity of the pleura, hypertrophy of the heart, and effusions into the pleura or pericardium; increased loudness of sound occurs in emphysema of the lung, or effusion of gaseous fluids into the pleura; finally, the gurgling and metallic tingling indicate pulmonary excavations, or circumscribed cavities in the pleura, communicating with the bronchi.

"Inquiry should next be directed to ascertain the state of the respiration, (whether it be painful and provokes cough, the character of the cough and also of the voice, which may be hoarse, croupal, &c. after which, by the stethoscope the observer may ascertain the parts of the lungs which are or are not permeable to the air. The "rale crepitan" will indicate to him the first degree of pneumonia, œdema of the lung, and pulmonary apoplexy; acute catarrh will be distinguished by the "rale sonore" or "sibilant,"—chronic catarrh, and the gurgling of softened tubercle by the "rale muqueux," and interlobular emphysema, by the peculiar sound described above, as the *murmur frictionis.*

"The phenomena of the voice should be explored in the different parts of the chest. If pectoriloquy is heard under the clavicle, or in the hollow of the axilla, particularly at one side, it indicates phthisis; œgophony is the proper sign of effusion into the cavity of the pleura; finally, the metallic tingling anounces a cavity communicating with the bronchi, and the metallic respiration, a simple bronchial fistula.

"When any symptoms of effusion exist, it will be necessary to measure each side of the chest, and try by succession to discover the presence of the fluid supposed to be present.

"When the heart is supposed to be affected, the observer, after having ascertained that there is no unnatural enlargement in the præcordial region, and after making percussion, should proceed to examine the pulsations of the organ, between the fifth and seventh ribs, and at the base of the sternum. He should consider these in reference to their extent, impulsion, sound and rythm. If they are feeble, and heard in different parts of the thorax, he may suspect a dilation of the ventricles; if, on the contrary, they are strong and circumscribed, they indicate hypertrophy; if they

emit a clear sound, it is a symptom of thinness of the walls of the heart. The disease is proved to exist at the right or left side of the organ, according as these effects are more audible at the base of the sternum, or between the cartilages of the ribs, and the time at which they are heard marks whether it is the auricles or ventricles that are affected. When the "bruit de rape," or sound like a file, is heard at the left side, and is synchronous with the contraction of the ventricle and the pulse, it indicates a narrowing of the sigmoid-aortic and mitral valves: when, on the contrary, it is synchronous with the contraction of the auricles, the narrowing is at the auriculo-ventricular opening; when it is heard at the base of the sternum, it is a sign of contraction of the tricuspid or sigmoid valves of the pulmonary artery.

"The observer should examine the anterior part of the sternum, to ascertain whether there be an aneurism of the arch of the aorta, and the posterior part of the thorax, to determine that of the descending portion of this vessel. In all these cases, he should attend particularly to the state of the pulse, whether it be frequent, small, irregular, contracted, or developed; lastly, he should conclude this examination by noting the expression of the countenance, the appearance of the body, and the symptoms referrible to affections of other organs."—pp. 66–69.

The exposition of the method of examination applicable to diseases of the abdomen, and also of that applicable to the different tissues, as the cellular, cutaneous, mucous, muscular, fibrous, &c., is exceedingly judicious, and should be diligently read by every student who wishes to apply his pathological knowledge to practice. The author closes the first part of his work with an account of the method of making post mortem examinations, and some general observations on diagnosis.

The *second part*, as we have before stated, relates exclusively to the pathology and diagnosis of diseases. These are arranged in the following order: Diseases of the brain and its membranes; diseases of the medulla spinalis; diseases of the chest; diseases of the heart and its connections; diseases of the digestive organs; diseases of the urinary organs; diseases of the organs of generation; diseases of the skin; diseases of the cellular tissue; inflammations of the mucous membranes; affections of the muscular, synovial, and fibrous systems; diseases of the vascular system; general diseases; eruptive fevers; fevers; poisons.

In treating of particular maladies, the author displays an intimate acquaintance with symptomatology and pathological anatomy. He says nothing of the therapeutic management of diseases; a circumstance the more to be regretted, as it materially incommodes the young practitioner, who is always desirous to connect the study of the nature and seats of diseases with the indications and means of cure. To the American student, however, the fault alluded to is perhaps of no great consequence; inasmuch as the modes of practice, pursued in the Parisian hospitals, are by no means suited to the cure of the acute diseases of the United States.

There is one character, belonging to the second part of the present *Manuel*, which greatly increases its value, namely, its exclusive adherence to matters of fact, being no where encumbered with theoretical allusions or speculations. What the doctrinal opinions of the author are, we are left to infer from his statements of the symptoms of diseases and the morbid appearances disclosed by dissection. Judging from these, we should say he is decidedly opposed to the Broussaisian theory of fever. However this may be, we think the facts he records are in no way reconcilable with the dogmas of the *Val de Grace* professor. The anatomical characters of several forms of fever, so far from showing the proximate cause of the disease to be a *gastro-enteritis*, go directly to disprove it. Our readers will perceive the correctness of this remark by attending to the account given by the author, of the appearances observed on dissection in the following varieties of fever. "*Adynamic fever.*"—"In the present state of the science we cannot exactly describe the anatomical characters: the bodies run into putrefaction in a very short time; the parenchymatous viscera are found softened: the lungs and the lining mucous membrane of its numerous canals are gorged with a thin, black blood." "*Typhus.*"—"The anatomical characters vary *very* much; the viscera of the head, thorax or abdomen, sometimes are seen with all the marks of most acute inflammation; in other cases it seems to have been very slight, or no traces of any disorganization may be observed, especially where death has occurred very rapidly:

the bodies generally putrefy quickly." "*Intermittent and remittent fevers.*"—"The appearances presented after death are very variable: we know of none which may be called pathognomic of the disease; the spleen is sometimes found increased in size and consistence, particularly when the disease has been of long standing." "*Contagious fevers.*"—"The organs to which those symptoms are referrible, which characterized the disease, present various alterations in their appearance and texture, but in some cases there is no appreciable alteration, particularly when the patient dies in the early stage of the disease."

We cannot conclude this article without returning our thanks to Messrs. Togno and Quain—to the former for his excellent translation of Bichat—and to the latter for his version of Martinet. To Mr. Quain is especially due an expression of indebtedness, for enriching his author's work with many valuable notes and additions. In no literary labour can the juniors of the profession engage with more benefit to themselves and profit to the public, than in rendering into their own language the medical productions of those who write in other tongues.

ART. II. *A Treatise on Retention of Urine, caused by strictures in the Urethra; and of the means by which obstructions of this canal may be effectually removed.* By THEODORE DUCAMP, Doctor of Medicine of Paris, &c. Translated from the French, with Notes and Additions. By WILLIAM M. HERBERT, M.D. New-York. 8vo. p.p. 220. 1827.

WE consider judicious monographs, even if they contain nothing that is new, as much more conducive to the advancement of medical science than systems and vade mecums. Of these last, the former necessarily contain a large proportion of error, and the latter are encouragements to idleness.

The work of M. Ducamp, besides posting up in a tolerably satisfactory and candid manner, all that it is necessary to know on the nature and treatment of strictures of the urethra, offers a new and ingenious mode of curing these troublesome

and dangerous maladies. It acquired for its author a very just celebrity in France, which he has not lived to enjoy. His translator, a graduate of the College of Physicans of Surgeons of New-York, at the commencement of the year 1827, by a remarkable coincidence, has also been called away from a community which he might have filled with his fame, and a profession he was fitted to honour.

The work commences with a very good description of the urethra in the male—and an exposition of the cause of strictures, which he attributes to a chronic inflammation and thickening of the urethra and circumjacent parts.

"Strictures may be produced by the induration of the mucous membrane alone; but occasionally the irritation extends to the adjacent cellular tissue and corpus spongiosum: these parts, which are naturally very pliant, lax, and extensible, harden and become dense; the cellules of which they are composed are obliterated, either by the adhesion of their sides, or by the deposition of coagulable matter within them; and the canal undergoes an actual strangulation in the part affected. The passage of the urine is then obstructed in a greater or less degree, both by this coarctation, and the intumescence of the mucous membrane."—p. 8.

We are surprised to find no mention made of the effects of falls upon the perineum, by which the urethra is often lacerated. Some of the worst strictures that are met with, arise from this accident. The early introduction of bougies alone will prevent the cicatrix from narrowing the urethra.

"Whatever may be the seat or nature of the stricture, the symptoms which attend it are nearly the same, or vary only in proportion to the narrowness of the passage that is left for the urine, and the duration of the disease. If the stricture be inconsiderable, the urine flows in a small twisted or bifurcated stream: the patient passes his water slowly, and suffers no other inconvenience than a slight scalding during its evacuation, with a sense of weight at the perineum, and itching along the course of the canal. The stream gradually becomes more slender and weak, the patient takes a longer time to make water, although he passes less at once; he also experiences a greater degree of micturition, so frequent and so urgent as to oblige him to rise several times in the night. The discharge of the urine can now be accomplished only by continued efforts, and is attended with acute pain, and tumefaction of the penis. If, after having

voided as much as he is able, the patient should repeat his efforts, he can yet procure the discharge of a small quantity; an evidence that the bladder has not been entirely emptied. He experiences, particularly after having retained his water some time, a sense of weight in the groins, and pain above the symphysis pubis; if the hand be applied to the latter part, a smooth, hard tumour will be felt, which, upon being pressed, causes exquisite pain, and most commonly excites a degree of micturition. This tumour is formed by the bladder inordinately distended. In this stage of the disease, the slightest fatigue or the least excess may cause an entire obstruction of the passage of the urine, and reduce the patient to a very critical state.

"But the difficulty of making water may arrive at a still greater height. Indeed, we sometimes meet with persons, in whom the stream is so feeble, that instead of being projected to a distance from the penis, it falls vertically between the legs, like the jet of a glass-cutter's wheel.

"The condition of others, again, is yet more deplorable; the urine escaping only drop by drop, and the quantity discharged at a time not amounting to more than four or five teaspoons full, although the patient occupy ten minutes in the attempt. Persons in this state feel a constant inclination to make water; and their existence is passed in miserable perplexity, between the desire and the dread of obeying an urgent impulse. Indeed, nothing can be more painful or exhausting than the urinary evacuation, under such circumstances; so laborious are the efforts of the patient, that his knees tremble, his face becomes flushed, the perspiration bursts from his forehead, and the contents of the rectum accompany those of the bladder, so that the same posture becomes necessary for the latter evacuation that is usually adopted for the former. A merchant, whose case will be hereafter detailed, and who had several strictures in the urethra, being reduced to this state of torture, but, nevertheless, under the necessity of attending to his business, and of passing his water in the street, was in the habit of carrying about him rolls of linen or soft paper, which he would introduce into the anus, and firmly hold there during the evacuation, in order to prevent the expulsion of the fæcal matter. The straining necessary in his case to discharge the urine, was such as to cause an enormous inguinal hernia; a disorder, indeed, not uncommon to persons attacked with retention of urine, in whom, also, for the same reason, we often meet with prolapsus ani.

"*Incontinence of Urine.* When the stricture in the urethra is inconsiderable, it commonly produces, at the same time, both strangury and incontinence of urine. The latter symptom manifests itself in two ways: most generally, a small quantity of urine flows guttatim for a few minutes after the patient has made water. At other times the liquid escapes also in drops, after any very violent exercise. The rationale of the first phenomenon is this: the urine passing with much difficulty through the stricture, its expulsion requires strong contractions of the bladder and abdominal muscles; when these contractions have ceased, that part of the urethra

which is behind the obstruction, contains a certain quantity, which being higher than the opening in the stricture, flows in drops by the mere force of gravity, and falls upon the clothes. If, under such circumstances, the patient neglect to change his linen with suitable frequency, he will be constantly bathed in urine, and diffuse its disagreeable odour wherever he may go.

"The other species of incontinence is produced in a different manner; and occurs only when the expulsion of urine is extremely difficult. In such cases the bladder being almost constantly over-distended. The accumulation of the fluid is no longer limited by the neck of this organ, the sphincter relaxes, the urine dilates that part of the urethra which is behind the obstacle, and it is then the latter and not the neck of the bladder by which it is confined. Whenever, in such a situation, the patient coughs, walks fast, or exercises his body in any manner, the contraction of the abdominal muscles compresses the bladder, and propels some drops of water through the opening in the stricture in such a manner as to wet the linen. Here it is very difficult for the patient to avoid uncleanliness and fœtor, for the fæcal matter is often expressed at the same time with the liquid excretion.

"*Complete Retention.* Whatever be the degree of strangury—whether the urine flow in an extremely attenuated stream, in an uninterrupted succession of drops, or only drop by drop, there is yet an aggravation of the disorder to be apprehended far more serious in its consequences; namely, the impossibility of passing a single particle of urine—constituting what is called complete retention.

"The least imprudence, the most trifling excess may occasion this terrible consummation. And this we may easily conceive; the strictured portion of the urethra, continually irritated by the pressure of the urine forcibly propelled against it, is rarely free from inflammation, which, if it be but inconsiderably augmented, will cause a greater afflux of humours in the vessels of the part affected; hence a greater or less degree of tumefaction, which may increase the stricture so much as to obstruct the passage of the urine completely."—p. 13–16.

"It is rare to see a man having stricture in the urethra and at the same time enjoying full health. His digestion is more or less depraved, and he often manifests an inordinate irascibility. But the most remarkable consequence experienced by persons in such a condition, is an attack of fever more or less complete, and coming on at indeterminate periods. In some it consists of an intense head-ache, with heat of the skin and acceleration of the pulse; others have a chill which is followed by a slight sweat, but without increase of temperature. In others again,—and these are the most numerous—the paroxysm commences with a violent chill and rigors followed by a hot skin, frequent pulse, and sometimes delirium, terminating in copious perspiration; presenting, indeed, all the characters of a regular fit of intermittent fever."—p. 20.

"Such are the most prominent symptoms of a stricture in the urethra:

their presence constitutes the diagnosis of this disease. To recapitulate summarily—whenever a person makes water with difficulty, and in a very small stream—when his attempts are frequent, but productive of a scanty discharge—when he constantly, or at intervals, feels a sense of weight at the perineum—itching along the canal—a flow of mucus, and irregular paroxysms of fever—we are almost positively certain that such a person has one or more strictures in the urethra.

"We may ascertain the truth by introducing a bougie into the canal: if the instrument be stopped in its progress, or tightly wedged in a particular part of the route through which it has to pass, the existence of a stricture ceases to be doubtful."—p. 21.

The author goes on, page 22, to give the ratio symptomatum—

"The part of the urethra which is behind the stricture, retaining its natural dimensions, receives from the bladder during the discharge of urine, more of this fluid than the obstacle will suffer to pass at a time; the latter, therefore, represents a kind of dyke, which confines a part of the water that flows against it. In this state of things, the urine continuing to be impelled with force by the contraction of the bladder and abdominal muscles, presses more and more upon the part of the urethra posterior to the obstruction, and distends it beyond measure."

This view of the subject is correct, so far as it goes; but other changes take place. The bladder, like other muscles, inordinately called into action, acquires great strength and thickness, and constantly irritated, contracts to a small pouch incapable of holding more than an ounce of urine. Hence it happens, that even for some time after the stricture is removed, the patient is still unable to retain his urine more than a few hours. It is important to bear this circumstance in mind, because it will be found that the degree of stricture is proportioned to the frequency of urinating.

After explaining, in a very clear and satisfactory manner, the mode in which urinary fistulæ are caused by gangrene, ulceration, or rupture of the perineum, and citing a valuable, and the more valuable, because common, case of rupture of the urethra, by the forcible introduction of a bougie, the author thus adverts to the formation of abscesses near the urethra, but not originally communicating with it.

"The inflammation and distention of the urethra behind the stricture, the sources of all the evils we have just described, may also occasion others. It is admitted that inflammation does not always confine itself to the irritated organ, but afterwards extends to the parts in its neighbourhood: it is thus that the inflammation of a tooth is communicated to the investing cellular substance, and causes an abscess in the gum or in the cheek—that an inflammation of the interior of the larynx gives rise to an abscess in the parts surrounding the cartilages of that organ—that chronic irritation of the arms occasions an abscess in the nates;—so the inflammation of the urethra extends, in some cases, to the surrounding cellular tissue, and causes the formation of an abscess.

"The deposition of pus in this place is announced by a sense of uneasiness and weight in the perineum; in a short time a small tumour makes its appearance in this part,—increases in size—becomes the seat of pulsating pain—and manifest signs of fluctuation soon appear; the patient at the same time experiences chills and a certain degree of fever. The tumour grows larger, and becomes more soft daily; and if the pus be about to make its way through the skin of the perineum, the integuments in this place become thin and ulcerate, and a certain quantity of a white homogeneous pus, without any proportion of urine, makes its escape. On the other hand, the skin sometimes remains untouched, and the abscess opens into the canal. If the aperture which yields a passage to the purulent matter be behind the obstruction, the urine, being interrupted in its course, enters the cavity of the abscess, and produces all the mischief of a urinary infiltration. If, however, the opening be situated before the stricture, the canal being unobstructed beyond it, the water meets with no impediment in its course, and may pass over the abscess without entering it or producing extravasation."—p. 28, 29.

The bladder in those who have strictures, discharges only so much of its contents, as to preserve it from over-distention. "Why," asks the author, "cannot the bladder discharge above one fourth of its contents, when there exists but an inconsiderable stricture in the urethra?" The cause "cannot be in the canal, for as it allows one fourth, it might in time suffer also the other three to follow.—It is not in the liquid itself; for that which is evacuated presents precisely the same character as that which is retained."—"The cause of the phenomenon lies in the bladder."

The author made the following experiment.

"When strongly urged by a desire to make water, I compressed my penis, near the glands, in such a manner as to allow the urine to pass only

in a very small stream. I soon experienced great pain in the course of the canal; the desire of evacuating the bladder became more vehement, and the efforts of expulsion more considerable. It was not long before I felt a painful sense of gravitating pain in the region of the bladder and in the groins, and the canal at length gave me such anguish, that I mechanically removed my hand, and restored its natural calibre. I afterwards repeated the experiment with more resolution; the same pain and torture were endured, and became so exquisite, that it appeared as if the urethra would burst, though I had no apprehension of such an accident. At short intervals the pains increased in violence; gradually, however, they diminished, and I ceased to make water, although I had not voided half my usual quantity. The pain still continued very considerable in the urethra. After the lapse of a few minutes, wishing to know whether I had completely emptied my bladder, I attempted to make water, and passed about as much as had flowed during the experiment. This operation I have repeated several times, and always with the same result. Hence I have concluded, that it is the nature of the contraction of the bladder not to be durable, and that after a certain time it ceases, notwithstanding the continued action of the stimulus by which it was first excited; consequently that the ejection of urine is incomplete in cases of stricture, because the time required for its passage far exceeds that for which the bladder may continue its contraction; and which is still more shortened by the patient, as far as lies in his power, on account of the pain which it occasions him. Directing my attention afterwards to the contraction of other muscular parts, I found it durable in none, and that all require intervals of relaxation, though habit may diminish the permanency of the latter."—p. 32, 33.

Treatment.—The author gives the preference, and very justly, we think, except in cases of very narrow strictures, to the wax bougies. In narrow strictures, they have not sufficient firmness, and become too soon soft by the heat of the urethra. Those of gum-elastic are to be preferred.

"When the bougie is introduced, it is to be fastened, that it may not escape from the canal. For this purpose, various methods have been devised. The following is the one most used: two or three needles full of cotton are twisted together, and tied by the middle to the end of the bougie in a double knot; the two ends of the thread are then carried above the gland, where they are united, also by a double knot, and then brought back to the end of the bougie, where they are again secured in the same manner. This kind of bridle has one disadvantage, that of compressing and strangulating the penis, during the frequent erections that take place under the use of these instruments. The same ligature has been fastened under the prepuce; but this has the additional inconvenience of irritating and even ulcerating the gland. Several kinds of elastic rings have been

invented, all of them more or less complicated. I made one of my patients use a very ingenious apparatus. It consisted of a band of caoutchouc united at the extremities so as to form a ring, and of a cundum. After having introduced the bougie, he bent it half an inch from the end, so as to make it at a right angle with the orifice of the urethra. This hook being made, he covered the bougie and penis with the cundum, over which he slipped the gum-elastic ring. This contrivance possesses three advantages. 1st. The ring expands at the time of erection, and does not embarrass the penis: 2d. With the precaution of leaving two or three inches of the bougie beyond the penis, when the erection of the latter takes place, it extends along this portion of the instrument, and does not force out of the stricture that part of it which lies in the opening: 3rd. The matter of the discharge is received on a piece of soft linen, placed within the cundum, so that the patient's clothes are not soiled. I constantly use the ring of caoutchouc. I fasten a thread to the extremity of the bougie, then bringing the ends, right and left to the sides of the penis, over which I slide the ring, they are returned to the end of the instrument, and then made fast by a double knot.

"The bougie being fixed by any of the foregoing methods, the patient wears it a longer or shorter time, according to the degree of pain it occasions. It is advisable not to leave it in the canal longer than half an hour, morning and evening, for the first few days. Afterwards, most practitioners do not withdraw it, except when the inclination to make water is very urgent, and replace it as soon as the patient has satisfied this want. Others do not remove it even at those times, if the patient can void his urine with it in his canal. In this case it is renewed only once a day, or perhaps only once every other day. The size of the bougies is increased gradually as the stricture is dilated, until one can be passed equal in diameter to the natural calibre of the canal."—p. 44–46.

This treatment may be applicable to many cases, especially in hospitals, where our patients may keep in their beds, or at any rate not move about much. But in private, and in general even in hospital practice, the introduction of a bougie every other day and afterwards daily, suffering it to remain in the urethra from five minutes to two or three hours at a time, we have found far preferable, and this is the common practice of the English surgeons.

But what are we to do in those but too frequent cases in which the bougie cannot be passed at all? We do not perceive that the author notices the proposal of Duypetren, which is, to pass a bougie down to the stricture, and to leave it there several hours, and then renew the attempt; a practice

of which we cannot speak from our own experience. But he adverts, with just censure, to the use of conical steel and other metallic catheters which are calculated, in our opinion, to do serious mischief.

The author prefers puncturing the bladder above the pubis, on account of the greater facility with which it may be performed. We cannot think that even on this account it should be preferred to puncture through the rectum.

The author next passes in review the treatment of Hunter by the nitrate of silver, and of Whately by kali purum, giving, we think, rather an exaggerated account of the disadvantages of each, and then sets forth his own peculiar method.

The indication is, " to destroy the morbid disposition of the parts which form the stricture, and to reduce them to a level with the rest of the canal.

" Caustic, to be employed as advantageously as possible to a stricture in the urethra, should come in contact with nothing but the stricture, and touch it from within outwards throughout its whole extent, affecting no other part than that which obstructs the passage of the urine. For this purpose it would be necessary, before attempting the application of the caustic, to ascertain exactly the situation of the point to be touched.

" It is important to determine with precision at what distance from the orifice of the glans, the stricture we propose to treat is situated. For this purpose the canal must be explored with a catheter of middle size, in order that it may pass readily through the sound parts of the urethra, and be arrested by the first strictured point that it encounters. It is customary to employ a plaister bougie on which a mark is made with the nail near the orifice of the glans. I make use of a hollow bougie of gum-elastic, of the size No. 6, on which are marked the divisions of a foot rule. On introducing this bougie, I always know the distance to which it has penetrated the urethra; and when it is stopped by a stricture, I perceive immediately that such stricture is at the distance of so many inches and lines from the orifice, which I note down.

" Having ascertained this point, I immediately proceed to the examination of another, which is the situation of the opening in the stricture. In order to do this, I take an impression of the stricture in wax, and I obtain in relief the form of its anterior extremity. For this purpose I make use of the following instrument, which I call an *exploring catheter*. I take a bit of sewing silk, and having tied several knots in it, and dipped them in melted wax, I round off the wax in the manner represented in fig. 7, pl. I.

By means of a bit of edging I pass the silk into the catheter, entering at the larger opening; when it has reached the other opening, the bulb formed by the knots covered with wax is detained, while the silk passes on and forms at the extremity of the catheter, a pencil of fine downy threads, both soft and strong; or else I pass the bit of flat silk through four little holes situated near the end of the instrument, and uniting them together in a knot, I afterwards spread them out in the form of a pencil. This pencil is soaked in a mixture composed of equal parts of yellow wax, diachylon, shoe-maker's wax, and resin; I take a sufficient quantity of it to enable it when rounded off to equal the bulk of the catheter. I let this *moulding wax* grow cold, and softening it between my fingers, roll it upon some hard polished surface. I cut this kind of bougie added to the gum-elastic canula, at about two lines from the extremity of the latter, round off the wax like the end of a catheter. By this arrangement, the moulding wax, mingled with the filaments of silk, becomes incorporated with them, and cannot fall off. I introduce one of these catheters into the urethra, and after I have arrived at the stricture, I leave the instrument in its place for a few moments, in order that the wax may have time to grow warm and soften, when the catheter is pushed forward; the wax being thus *pressed* between the catheter and the stricture, fills all the sinuosities of the latter, enters its opening, and in a word, is moulded according to its figure. The catheter being completely withdrawn, I find at its extremity the form of the stricture."—p. 104, 105, 106.

We must omit some further details, which can only be made intelligible by reference to plates.

The author proceeds:

"Having taken an impression of the stricture, we know whether its opening be in the middle, above, below, or at either side: we want, therefore, an instrument which will enable us to direct at will, the point of the bougie to the middle, upper, lower, or lateral part, in order that it may correspond with the aperture in the obstacle, and enter it.

"To effect this, I make use of an instrument which I call a *conductor*. It consists of a gum-elastic catheter, of the size No. 8 or 9, eight inches in length, open at both ends, and marked, like all my other instruments, with the divisions of the foot. I close the anterior extremity of this instrument, with a stopper of wax and silk, in order that the fluids in the urethra may not penetrate the interior of the conductor, and I mould this waxen stopper on the end of the catheter, so as to give it an uniformly rounded extremity. The instrument being oiled, is introduced down to the stricture, and the stopper is withdrawn. When the orifice of the stricture is in the centre, the canal forms, at the strictured part, a section of a cone, having at its apex the aperture through which the bougie is to pass. Now, my conductor also represents a section of a cone, open at its top, and the

consequence is, that when the conductor is applied against the obstacle, its opening corresponds with that of the latter; so that a bougie necessarily enters the orifice of the stricture so soon as it has passed that of the conductor. To this we may add, that the bougie cannot vacillate in the conductor, and you may be certain that the introduction of a bougie by this method, is always very easy, when the opening in the stricture is at the centre.

"When this opening is situated above, below, or at either side, the canal still represents in the strictured part, the section of a cone, but the opening is not at its summit; accordingly the opening of the conductor will not correspond with it, but with some solid part; the conductor, therefore, which I have just described, would not answer in this case. I then employ a conductor which has an eminence of a certain size at one of its sides, near its extremity. By this arrangement the orifice of the conductor is no longer in the middle of the instrument, but on one side. Having ascertained by the form of the impression that the aperture in the stricture is situated at its upper part, I introduce the conductor, and turn downwards the eminence which it has at its extremity; the opening is thus turned upwards, and corresponds exactly with that of the obstacle, so that a bougie passing from the one, necessarily enters the other. If, on the contrary, the opening in the stricture be at the lower part, I direct the eminence in the conductor upwards; I turn it to the right when the aperture is at the left, and to the left when it is at the right; so that I direct at will the point of the bougie into the orifice of the stricture."—p. 109, 110.

We forbear to make further extracts illustrating the subsequent manipulations, which cannot be rendered intelligible without reference to plates.

After opening a passage through the urethra with caustic, the author employs bellied bougies to complete the cure; but upon the whole, seems to prefer distending it with air, introduced through a tube and forced by a syringe into the processus vermiformis cæci, manufactured like gold-beater's skin. These we think are unnecessary refinements. The substantial merits of the author are the discovery of a means of modelling a stricture, and his peculiar method of cauterizing it.

Among other valuable notes by the able translator, we subjoin the following.

"M. Ducamp mentions but two modes of effecting the dilatation of the urethra. There is another, not undeserving of attention, particularly when we reflect that no art requires so great a variety of resource as that of curing diseases. This method consists in the forcible injection of fluids

into the canal. Mr. Sœmmering has sometimes adopted this plan in cases where the stricture was so narrow as not to admit the finest bougie. It is done by injecting olive or poppy oil into the canal, closing the orifice of the glans, and then by pressure with the fingers, attempting to propel the liquid through the obstacle. This manipulation is to be repeated until a bougie can be introduced.

M. Amussal affirms that this process is preferable to the use of bougies, at the commencement of the dilatation of a stricture; that it is applicable to cases of complete retention; and that it may also be had recourse to, to assist the action of flexible catheters; that is to say, when the stricture has been sufficiently dilated by injections to permit the introduction of a catheter, it will be advantageous to force the liquid between the instrument and the parietes of the urethra."—pp. 218.

ART. III. *On the Atomic Theory of Chemistry.* By JOHN FINCH, M. C. S. &c.

2. *Electro-Magnetism; being an arrangement of the principal facts hitherto discovered in that science.* By JACOB GREEN, M.D. &c. Philadelphia, 1827.

THE paper of Mr. Finch under the foregoing imposing title, is published in the 29th number of the American Journal of Science and the Arts. We should not have noticed this production, did we not conceive that the author is completely *at fault* in his notions, and did we not fear, that from the wide circulation of the journal in question, he might mislead, or at least confuse some who are commencing chemical studies.

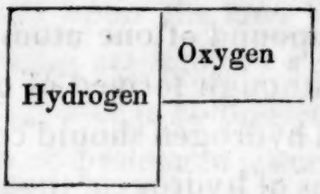
So far as we can understand this paper, the main object of the author is to point out the advantages which would result from considering water a compound of one atom of oxygen, and *two* atoms of hydrogen, a theory proposed several years since by Sir H. Davy, but which, with two or three exceptions, was not adopted by the best chemists.

The advantages which Mr. Finch promises from the adoption of this theory are,—1st, that the theory of volumes will then coincide with the theory of atoms; 2ndly, that the numbers representing the atoms or volumes of substances, will approach very near to their specific gravities.

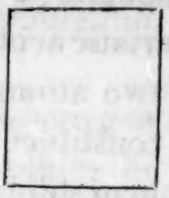
But the author has omitted to mention the inconvenience attending this supposition, and which, in our judgment, is far

greater than the evil it is intended to remedy. To demonstrate this more clearly, we shall offer the following symbols, representing the composition of the several substances, in volume, according to the most approved chemical authors.

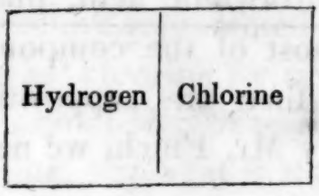
Water.

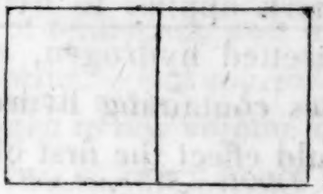


Resulting volume.

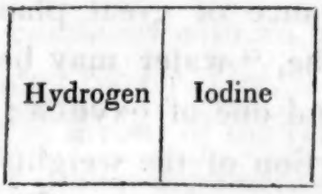


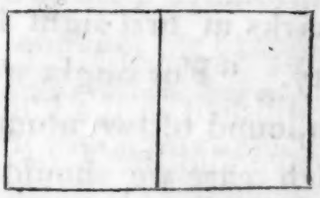
Muriatic acid.



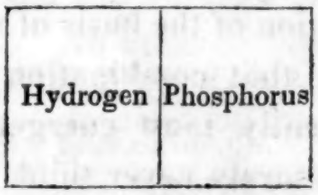


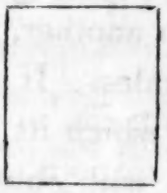
Hydriodic acid.



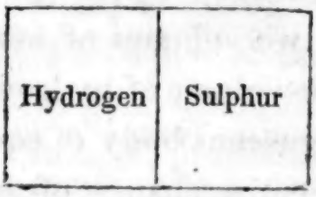


Phosphuretted hydrogen.

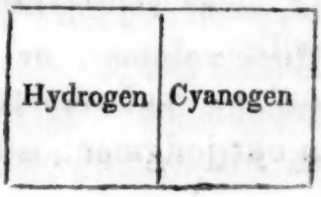


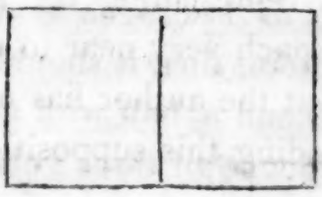


Sulphuretted hydrogen.



Hydrocyanic acid.





It will be observed, that in each of these compounds the volume of hydrogen is the same; that water consists of one volume of hydrogen, united with half a volume of oxygen; and that all the other compounds consist of one volume of each of the constituents. Now if we adopt Mr. Finch's theory, that water is a compound of one atom of oxygen, and two atoms of hydrogen, muriatic acid should be a compound of one atom of chlorine and two atoms of hydrogen, although formed of one volume of its constituents. Sulphuretted hydrogen should consist of one atom of sulphur, and two atoms of hydrogen, though composed of one volume of each of these elements. The same remark applies to hydriodic acid, hydrocyanic acid, phosphuretted hydrogen, and indeed to most of the compound gases containing hydrogen. How far then this supposition would effect the first object proposed by Mr. Finch, we need not stop to inquire.

This theory found a more able advocate in Dr. Ure, whose remarks at first sight have the appearance of great plausibility. "For aught we know," says he, "water may be a compound of two atoms of hydrogen and one of oxygen; in which case we should have the proportion of the weights of the atoms as given by equal volumes, namely, 1 to 16. There is no good reason for fixing on one compound of hydrogen more than on another, in the determination of the basis of the equivalent scales. If we deliberate on that combination of hydrogen in which its agency is apparently most energetic, namely, that with chlorine, we would surely never think of pitching on *two* volumes as its *unity* or least proportion of combination; for it is *one* volume of hydrogen which unites with one volume of chlorine producing two volumes of muriatic gas. Here, therefore, we see that one volume of hydrogen is quite adequate to effect, in an active gaseous body of equal bulk, and thirty-six times its weight, an entire change of properties. Should we assume in gaseous chemistry, two volumes of hydrogen as the combining unit, or as representing an atom, then it should never unite in three volumes, or an atom and a half with another gas. Ammonia however is a compound of three volumes of hydrogen with one of azote;

and if two volumes of hydrogen to one of oxygen be called an atom to an atom, surely three volumes of hydrogen to one of azote, should be called an atom to half an atom." *Chemical Dictionary*, 2d. Ed. 423.

To these suggestions, Dr. Turner in his excellent little treatise upon the laws of chemical combination, offers the following satisfactory reply.

1. Water is composed of one volume of oxygen to two volumes of hydrogen; euchlorine of one volume of oxygen to two volumes of chlorine; and both compounds are supposed to contain an atom of each constituent. An atom of hydrogen is therefore represented by two volumes of hydrogen, and an atom of chlorine by two volumes of chlorine. But muriatic gas is composed of one volume of hydrogen to one volume of chlorine, or, what is the same thing, of two to two: hence it contains an atom of each. We see, therefore, that the same quantity of hydrogen which combines with an atom of chlorine, also combines with an atom of oxygen; and that the example adduced by Dr. Ure, is a most powerful and convincing argument in favour of the very doctrine against which he contends.

2. A similar argument applies to the constitution of ammonia. In fact, nitrous oxide gas is composed of one volume of oxygen and two volumes of nitrogen, but one atom of each element. An atom of nitrogen is therefore represented by two volumes of that gas, precisely as happens with respect to hydrogen and chlorine. But ammonia contains three volumes of hydrogen and one of nitrogen, which is the same ratio as 6 to 2; and hence it is composed of one atom of the one, to three atoms of the other.

Mr. Finch has attempted a table of chemical equivalents upon his plan, which at least deserves the credit of originality. For example, protoxide of chlorine is said to consist of *two* volumes of oxygen and one volume of chlorine; sulphuretted hydrogen, of *two* volumes of hydrogen and one of sulphur, &c. !!

In what is said by our author concerning the Daltonian formula, he has been combating a wind-mill of his own construction. Although unmeasured praise is due to Mr. Dalton for his researches, his formula has been greatly modified, and

is not at the present time, rigidly adhered to by a single chemist.

Upon the whole, we regret that Mr. Finch should have ventured upon a subject with which he has evidently so little acquaintance, especially, a subject where novelty can only be excused in the most profound philosophy.

Of the work of Dr. Green we have only a few words to say. It is but a few years since Electro-Magnetism has risen to the rank of a distinct science. The distinguished attention which it has received in various European countries has been followed by discoveries the most novel and interesting; and the facts connected with it have now become so numerous as to require for their due consideration distinct and by no means limited treatises. Several works of this description have been published or are now in the course of publication in England and France; but if we except what is contained in the translation of Biot's Elementary Treatise, we have had nothing on the subject from the American press.

So far then as it regards the general diffusion of science among our citizens, we are greatly indebted to Dr. Green for the Manual before us, which, as its titlepage informs us, contains the "principal facts" in the science, although we cannot say much in favour of their 'arrangement.'

Dr. Green, in the composition of this work, has availed himself of the fragments which are scattered through the numerous scientific periodicals of the day. So far as we can judge from an attentive perusal, he is most largely indebted to the Historical Sketch of Electro-Magnetism in the 18th and 19th vols. of the Annals of Philosophy.

It would have been a great convenience to those who wish to pursue the science if Dr. G. had given more frequent references to the original papers from which his extracts are made. For example: "Note C. on electrical quantity and intensity," is copied without reference from an excellent article on Electro-Magnetism in the 35th volume of the Quarterly Review, a work within the reach of almost every American student.

We also regret that Dr. Green has not indulged his readers

with a little more theory, which, after all the hue and cry against it, now-a-days so fashionable, serves at least the purpose of artificial memory; and in this respect is of great use to the student.

Notwithstanding these regrets, we are highly gratified with the appearance of this volume, and we doubt not that it will be very generally in the hands of chemical students.

QUARTERLY HISTORY

OF

IMPROVEMENTS IN MEDICINE AND SURGERY.

Foreign.

PHYSIOLOGY.

On Cutaneous Absorption. (*Arch. Gén. de Médecine. xi.* 75, *and Bib. Méd. Juillet* 1827.)—The subject of cutaneous absorption, and of absorption generally, has been lately investigated by M. Collard de Martigny. He has succeeded in establishing completely the reality of absorption through the skin, and has thrown considerable doubts over the doctrine advanced a few years ago by Magendie and Fodera, and now so generally adopted, that substances are absorbed throughout the animal system by a process of simple mechanical imbibition. As his experiments on these two topics appear to us important and conclusive, we shall give a short account of them. It is well known that Seguin, Magendie and other anterior physiologists have maintained that the skin, when not deprived of its cuticle, is incapable of absorbing any substances which do not irritate the cuticle, or alter it in one way or another. This, however, does not appear to be the general opinion; yet we are not aware that any very conclusive arguments have hitherto been brought forward to prove the existence of simple absorption through the cuticle. The vagueness of the foundation on which the general opinion rested led M. de Martigny to endeavour to establish it upon more solid facts; and he has made a great variety of experiments, which seem to put its accuracy beyond all question.

He first placed upon the palm of the hand an inverted glass funnel filled with water, and remarked an obvious diminution of the water in the tube

of the funnel after an hour or even less. He then varied his experiment, using precautions to preserve the pressure of the hand on the funnel uniform, as well as to prevent the evaporation of the water, and he still observed a sensible diminution. The following very simple experiment gave equally pointed results. In two small vessels of the same form and size he placed equal quantities of water, one being placed at his side exposed on the surface to the air, while into the other he put his two hands for half an hour. He then removed them and dried them in a handkerchief, the weight of which was taken both before and after this operation. The water of the two vessels was likewise weighed, and the proper correction being made for what was removed by the handkerchief from the hands, he found that 178 grains had been lost by absorption. Similar experiments were made with milk and with beef-tea, and the results were analogous. It appeared to him that the beef-tea was absorbed more rapidly, and milk more slowly than water. On subsequently resuming the investigation, he employed a still simpler method. He placed a few drops merely of the fluid to be examined on the inside of the arm, covering them with a small watch-glass, and allowing the experiment to go on for eight or twelve hours and upwards. In this way he remarked that water and brandy were absorbed altogether, and wine, beef-tea, and milk almost entirely. On next extending his researches to oleaginous substances, he arrived at the singular conclusion, that cutaneous absorption is not exercised upon them at all. Our readers will perhaps remember that Bichat, Magendie, Legallois, and others, have found that oleaginous fluids, directly introduced into the blood, obstruct its passage through the capillaries, and excite inflammation there. They likewise appear to undergo a species of digestion before they enter the lacteals, when they are swallowed as food; and further, when placed in contact with the serous membranes, they are absorbed very slowly, and not till they undergo a species of saponification. In a state of purity, therefore, they cannot enter the blood without causing serious injury. In the alimentary canal this is prevented by their digestion; in the serous cavities by their saponification through means of the serum. On the skin, where there is neither gastric juice nor a serous fluid, it is prevented by their being incapable of passing the cuticle. M. de Martigny found that they did not lose an atom of weight, after being eleven hours in contact with it.

The author concludes this department of his subject by endeavouring to determine the circumstances which regulate absorption through the skin. He has discovered that it is most rapid on those parts of the body where exhalation is greatest. He has farther remarked, that while exhalation is going on, there is no absorption; that absorption is diminished during exercise or by an increase of temperature; and that it is increased by a depression of temperature or by the evacuation of blood. In short, cutaneous absorption is influenced by every particular in the inverse ratio of cutaneous exhalation.

The other question which the author has endeavoured to investigate re-

lates to the mechanism by which absorption is effected. The experimental inquiries of Magendie and Fodera are conceived by many physiologists to be conclusive of the fact, that absorption is carried on by a process of simple imbibition; in other words, that in reaching the absorbent vessels substances percolate the living exactly as they do the dead tissues. It has always appeared to us, however, that the experiments of Magendie were liable to important objections, and that even the more conclusive experiments of Fodera, while they prove that mechanical imbibition or filtration does sometimes occur in the living body as through dead membranes, do by no means also prove that this phenomenon is not materially under the influence of the vital principle. The experimental reasoning of these two physiologists has been very ably criticised by M. de Martigny, and its fallacies exposed. To the experiment of Magendie, which consists in insulating a vein and applying an active poison to its surface, he very properly objects that the poison may have entered the blood not by filtration but through the *vasa vasorum*. He admits, however, the conclusiveness of the experiment of Fodera, in which he found that substances injected into the peritonæum might be soon afterwards discovered in the chest; but he insists that the existence of such an imbibition is no argument against the existence also of a special action of absorption: and such a special action has, we think, been proved by him to occur in the following phenomena. Into the stomach of animals killed the previous day he injected a weak solution of hydrocyanate of potass, and four minutes afterwards he observed that the outer surface of the stomach became of a uniform blue colour when tested with the sulphate of iron. He then repeated the same experiment on living animals with the following results. Twenty minutes after the injection of the hydrocyanate, when none of it has reached the outer surface of the stomach, he poured several drops of the sulphate of iron over it. It was not till five minutes afterwards that he remarked here and there a faint blue tint not uniformly diffused as in the former instance, but arranged in a fine network; gradually the tint deepened and extended itself, its reticulated structure became less distinct, and at length a uniform blue stain was formed, as in the dead animal. It is not easy to see to what the slow progress of the fluid through the living stomach is to be attributed, unless to the permeability of the tissues being modified by their vitality. He has also endeavoured to establish the doctrine of special absorption by the following experiments, in which an attempt is made to show that absorption is under the influence of the nervous principle. Having divided all the nerves which supply the hind leg of the rabbit, he tightened a ligature round the whole thigh, exclusive of the vein and artery, and introduced a solution of the extract of nux vomica into the lower part of the leg. He then found that the poison operated more slowly than when the nerves were left entire. In conclusion, therefore, from these and other familiar facts, the author argues that the new doctrine of absorption must be modified by a partial return to the old: and he adopts the opinion, that this function is carried on by a special and elective action of the capillaries.—*Edinburgh Medical and Surgical Journal.*

PATHOLOGY AND PRACTICAL MEDICINE.

A Case of the Foramen Ovale remaining open in the Adult, with a general Narrowing of the Aorta and Arteries, without the Morbus Cyanosus.—It has generally been supposed that the cause of the blue appearance of the skin in the morbus cyanosus was the aperture between the auricles of the heart continuing pervious after birth. M. MIGUEL has lately met with a case where this communication continued open, and yet there was no blueness of the skin; proving that the generally supposed cause of the discoloration is not correct. The case is in itself interesting.

Jean Antoine Adam, a jeweller, æt. thirty-six, came into La Charité, under M. CAYOL, August 1825. This man was fair, of small stature, and had never suffered from any severe disease; his complexion was red and white. When young, he was subject to occasional difficulties of breathing, coming on in fits, once terminating in syncope: antispasmodics usually removed them. He was married, and had several children. At the age of thirty, without any apparent cause, the fits of difficulty of breathing became more intense and more frequent. During eight days, he had daily three or four attacks, each appearing likely to terminate his existence. His face suddenly reddened, acute pain in the heart and head, with palpitations, continuing for about a minute; then he grew pale, and fainted. When the attack passed, he felt quite well, till another came on. This state (strange to say!) was looked upon as the indication of some pernicious fever, and large doses of quina were administered to stop its course, but which increased it. After continuing thus during a week between life and death, a change took place; the difficulty of breathing, which had been periodical, became constant, and increased in violence; and the headache became intense. Venesection was prescribed, and the man felt himself resuscitated by the operation, ("Je ressuscitai a mesure que mon sang coulait.")

For some weeks he was relieved, when the symptoms became again aggravated. He was again bled, and with similar success; and to this frequent bleeding, and the application of leeches, he owed the preservation of his life for six years. He says himself that there were more than 6000 leeches applied, and that he was bled seventy-two times during that period.

At the present time he presents the following symptoms: Face pale and emaciated, without the least appearance of the violet or blue colour of the lips, cheeks, ears, or any part of the body; extreme anxiety; respiration short, oppressed, and laborious; orthopnœa; short, teazing cough; the chest resonant on all points, and the respiratory murmur apparent throughout; the whole body is agitated by violent palpitations of the heart; the pulse was small, unequal, intermittent; the limbs œdematous; the abdomen large and tense, and gave an evident fluctuation; the extremities were cold, and the general temperature of the body was under the natural standard; the bowels inclined to constipation.

M. Cayol, in his diognosis, stated that there was considerable hypertro-

phy of the left ventricle, with narrowing of the orifice of the aorta by commencing ossification of the sigmoid valves. A diuretic mixture, with half a drachm of acetate of potash, was prescribed, with half a drachm of Aq. Lauri Cerasi.

The patient went on getting worse and worse. The smoking Datura Stramonium was tried, and for a short time gave much relief. The powder of Belladonna was also tried, and it appeared to soothe him a little.

On the 11th of September he died, and the body was opened thirty-six hours after death. On opening the chest, the heart, distending the pericardium, and pressing upon the left lung, appeared twice the natural size. The right ventricle and auricle contained some clots of black blood: their size was larger than natural. The auricles communicated by an opening as large as a two-franc-piece, evidently the foramen ovale, not obliterated. (*Revue Med.*)

Treatment of Tetanus.—At a meeting of the Westminster Medical Society, held in November last, Dr. Barry (whose name and reputation are familiar to our readers) made the following statement on this subject. "He had been at the head of the Medical department of an Army of 20,000 men, in the Portuguese service and been with it in the campaigns of 1813—4, when injuries of all kinds had been extremely numerous, and he had not seen twelve cases. In those which had come under his notice, he had at first been unsuccessful, he had tried every variety of treatment, and indeed had run through every plan which either experience or imagination could suggest. At length Dr. Fergusson of Windsor, who was his superior officer, came to his quarters; he conversed with him on the subject of tetanus, and had informed him of his great want of success. Dr. Fergusson inquired whether he had tried alternate doses of carbonate of soda and opium; he said not. Dr. Fergusson then informed him, that it had proved very successful in his hands, and recommended him to employ it in the next case which should offer. He had done so, and declared upon his honour, that although he had treated several patients immediately after, he had not lost a single patient. He had given the carbonate of soda to the extent of a drachm in solution at a dose and then followed it by a large dose of laudanum. The manner in which these remedies proved so beneficial, he was induced to think, was owing to the soda dissolving the thick mucous which covered the internalsurface of the stomach, and thus allowing the absorption of the opium, and therefore, indeed, it was the opium which produced the cure after all."—*Lancet. No. 222.*

The above mode of treatment has its origin in some experiments, made a number of years since by Humboldt on Stimulated Nerves. He applied the substances in question, alternately to the nerves of animals, and found that irregular action might be thus allayed.—(*Editors N. Y. M. & P. Journal.*)

On the Treatment of Intermittent Fever by the application of Sulphate of Kina to the Skin. (*Revue Medicale, Septembre* 1827.)—Doubts have been justly entertained whether the skin is capable of absorbing substances applied to it, unless the cuticle is previously abraded, or the substance is thrust through the cuticle by friction. It is agreed on all hands, however, that the surface of the true skin, stripped of its protecting cuticle, absorbs with rapidity; and our readers are probably aware that advantage has been lately taken of this physiological fact, in order to introduce into the system medicines which cannot be administered in sufficient quantity internally. M. Lesieur of Paris seems to have been the first who suggested the method now alluded to, and it has been since applied by himself and others to the administration of various active remedies. The paper of which a short analysis follows, is descriptive of the mode of treating intermittent fever by sulphate of kina administered in this way; and certainly the success and advantages held out by the author, M. de Martin, are very flattering. He states, that when the sulphate of kina is applied in a convenient form to a freshly blistered surface, it never, even when used in small quantities, fails to check the disease at once. In a state of purity it is ineligible, as it very soon irritates and inflames the surface of the true skin which is exposed to it, exciting livid redness, causing the formation of a gelatinous pseudo-membrane, and even destroying here and there the vitality of the surface of the skin, so as to produce small superficial sloughs. But when it is mixed in a state of fine powder with cerate, no such effects are produced, and in a short time it all disappears. The advantages of introducing the remedy through this channel are, first, that it can be safely and efficaciously used when owing to irritation or congestion in the alimentary canal, it is either unsafe to administer it internally, or useless, on account of its being rapidly discharged by vomiting or purging;—secondly, that a less dose acts with equal power; thirdly, that it acts more rapidly as the system is sooner brought under its influence:—and lastly, that it can easily be administered to those who are averse to take internal remedies, and more particularly to refractory children.—The circumstances connected with the action of kina through the skin illustrate well its mode of operation. M. de Martin remarks, that it cannot act by effecting a revulsion, or as a counter-irritant, because local irritation is not only not necessary to success, but even also prejudicial; for he has invariably found that the remedy was least certain in its effects, and that the largest doses where required when inflammation was excited. This is easily explained on the principle that it acts through absorption; for the gelatinous effusion which is thrown out in the cases in which inflammation is caused obstructs its access to the absorbing surface. In point of fact, a great part of the powder always disappears when inflammation is not produced. The following cases will serve as examples of the author's plan of treatment. *Case VI.* A stout man, thirty-five years of age, had been affected for three months with a quartan ague, which had been checked four times by various preparations of cinchona. In the fifth attack, M. de Martin found him at the commence-

ment of the fit with a frequent, strong, hard pulse, intense heat, flushed countenance, frequent strong cough, mucous expectoration, short breathing, pain under the left nipple, and a dry, red tongue. On account of the pulmonic affection, sixteen ounces of blood were taken from the arm. The fit returned again three days afterwards. Next morning, a blister having been applied three days before, and the part continuing to present a fresh surface, six grains of sulphate of kina were mixed with the cerate with which it was dressed, and twenty four hours afterwards the dressing was changed, and six grains more applied in the same manner. He had not any return of the fit, and from that time improved rapidly in general health. The blistered surface was not in the slightest degree irritated. *Case V.* A woman, twenty-three years of age, long liable to pulmonary catarrh, and affected for a year previous with wandering pains in the chest, oppression there, and dry cough, was attacked towards the end of November 1826, with quotidian ague, of which she was cured by the internal exhibition of sulphate of kina. Towards the close of December the disease returned, still in the quotidian form. During the fit the heat was intense, the pulse strong and frequent, the general oppression considerable, the breathing difficult, and interrupted by paroxysms of violent cough. She was bled to eight ounces during the second paroxysm. On the morning of the third day, four grains of sulphate of kina, mixed with cerate, were applied to an old blistered surface. The paroxysm never returned. The dressing was renewed every twenty-four hours for four days. The cough and difficulty in breathing continued after the ague had long ceased. The blistered part became somewhat red at first, and a thin pseudo-membrane was formed; but the irritation slight from the beginning, gradually diminished, and at length disappeared before the fourth dressing. *Case II.* This case exemplifies the kind of local inflammation which is caused by the remedy when not mingled with unctuous substances, as well as the effect of the inflammation in preventing its being absorbed. A soldier had suffered in the course of five months repeated attacks of tertian intermittent, and came under M. de Martin's care after the third paroxysm of a relapse. On the morning of the day on which he expected another, six grains of powdered sulphate of kina were sprinkled on a freshly blistered surface. The paroxysm appeared soon afterwards. Next morning the blistered surface had a deep red colour, was covered with a gelatinous exudation, and likewise showed here and there little yellow spots, which consisted of particles of kina covering little depressions in the cutis vera. Six grains of sulphate of kina were again applied, however. But now the pain became so intense, and the surface so red, that it was necessary to remove the powder, and apply a poultice. On the third morning the blistered part was covered with a thick, livid, moist eschar, having red edges, from which serum was discharged. The paroxysm reappeared this day, and again on the third, fifth, seventh, and ninth days afterwards. During this period the eschar became first black and dry, then round the edges soft and yellowish; and this softening extended inward in the way usual with

superficial eschars of the skin. After the sixth paroxysm the sulphate of kina was given internally, with the effect of checking the disease at once.—*Edin. Med. and Surg. Journ.*

On the use of Tannin as a remedy for Menorrhagia. (*Annali Universali de Medicina, Aprile* 1827.)—This substance has lately been employed, it is said, with very great success, in the treatment of uterine hemorrhage by an Italian physician, Dr. Porta. He has used it for three years, and has never found it fail but twice. The general results he has been led to by his practical experience are, that tannin has a special action on the uterus when the hemorrhage is active, whether it arises from chronic or acute metritis, but that in the latter case the inflammation must be previously combated by repeated copious blood-letting; that it is not of any use in hemorrhage connected with organic disease of the uterus; and that its action is very rapid, while the quantity required to effect a cure is so small as to be easily borne on the stomach. He has published several of the cases which have led him to these conclusions. The following is an abstract of a few of them. *Case I.* A woman of middle age, and of a bilious irritable temperament, after recovering from a severe attack of miliary fever, was attacked during convalescence with considerable uterine hemorrhage. Conceiving at first that it was nothing more than a permature appearance of the catamenia, she for some time paid little attention to it; but after it had continued several weeks, and had greatly reduced her strength, she became alarmed, and consulted Dr. Porta. He ordered her to take two grains of tannin every *two* hours, and in two days the hemorrhage ceased altogether. *Case II.* A woman, thirty-two years of age, of delicate habit, and nursing a child four months old, was seized with uterine hemorrhage, which, like the former patient, she at first imagined to be the catamenial discharge. As it continued, however, much longer than usual, and was rapidly enfeebling her, she had recourse to Dr. Porta, who found that she had been twenty days ill, and that she was affected with lumbar pains, some swelling and tenderness of the hypogastrium and symptomatic fever. He directed her to take a pill containing three grains of tannin every third hour; and she took only eight of them when the hemorrhage entirely ceased. *Case III.* A woman of irritable sanguine temperament, and thirty-eight years of age, had been affected for three weeks with menorrhagia, when Dr. Porta was called to visit her. He found that pressure on the hypogastrium excited pain there, shooting towards the loins, that the pulse was hurried, and that she was liable to sudden paroxysms of pyrexia. As there was not, however, any notable swelling in the hypogastrium, he ordered the tannin without any preliminary treatment, and the same quantity was given as in the last case. In the course of two days about two scruples were taken, upon which the hemorrhage was permanently checked. *Case IV.* A young woman of robust habit was attacked with profuse hemorrhage from the uterus, by which in the course

of a few weeks she was reduced to a state of great exhaustion. Notwithstanding her state, and the large quantity of blood she had lost, the pulse was frequent and full, and the hypogastrium was tumid and tender. Dr. Porta immediately ordered her to cease taking wine and tonic drinks, which had been given her up to that time, and directed three grains of annin to be administered every third hour. Towards the close of the fourth day the hemorrhage ceased. The lumbar pains which usually accompany the disease continued a few days longer. *Ibid.*

Tartar Emetic as used by Laennec in Peripneumony.—"As soon as I recognise the existence of the pneumonia, if the patient is in a state to bear venesection, I direct from eight to sixteen ounces of blood to be taken from the arm. I very rarely repeat the bleeding, except in the case of patients affected with disease of the heart, or threatened with apoplexy, or some other internal congestion. More than once I have even effected very rapid cures of intense peripneumonies without bleeding at all; but, in common, I do not think it right to deprive myself of a means so powerful as venesection, except in cachectic or debilitated subjects. In this respect M. Rasori does the same. I regard blood-letting as a means of allaying for a time the violence of the inflammatory action, and giving time for the emetic tartar to act. Immediately after bleeding I give one grain of the tartar emetic, dissolved in two ounces and a half of cold weak infusion of orange leaf, sweetened with half an ounce of syrup of marsh-mellows or orange flowers: and this I repeat every second hour for six times: after which I leave the patient quiet for seven or eight hours, if the symptoms are not urgent, or if he experiences any inclination to sleep. But if the pneumonia has already made progress, or if the oppression is great, or the head affected, or if both lungs or one whole lung is attacked, I continue the medicine uninterruptedly, in the same dose and after the same intervals, until there is an amendment, not only in the symptoms, but indicated also by the stethoscopic signs. Sometimes even, particularly when most of the above mentioned unfavorable symptoms are combined, I increase the dose of the tartar emetic to a grain and a half, two grains, or even two grains and a half, without increasing the quantity of the vehicle. Many patients bear the medicine without being either vomited or purged. Others, and indeed the greater number, vomit twice or thrice, and have five or six stools the first day; on the following days they have only slight evacuations, and often indeed have none at all. When once tolerance of the medicine (to use the expression of Rasori) is established, it even very frequently happens that the patients are so much constipated as to require clysters to open the body. When the evacuations are continued to the second day, or when there is reason to fear on the first that the medicine will be borne with difficulty, I add to the six doses, to be taken in twenty-four hours, one or two ounces of the syrup of poppies. This combination is in opposition to the theoretical notions of Rasori and Tommasini, but has been proved to me by experience to be very useful. In general the effect of tartar

emetic is never more rapid or more efficient than when it gives rise to no evacuation: sometimes, however, its salutary operation is accompanied by a general perspiration. Although copious purging and frequent vomiting are by no means desirable, on account of the debility and the hurtful irritation of the intestinal canal which they may occasion, I have obtained remarkable cures in cases in which such evacuations had been very copious. I have met with very few cases of pneumonia where the patient could not bear the emetic tartar; and the few I have met with occurred in my earliest trials; insomuch that this result now appears to me to be attributable rather to the inexperience and want of confidence of the physician, than to the practice. I now frequently find that a patient who bears only moderately six grains with the syrup of poppies, will bear nine perfectly well on the following day. At the end of twenty-four or forty-eight hours at most, frequently even after two or three hours, we perceive a marked improvement in all the symptoms. And sometimes even we find patients, who seemed doomed to certain death, out of all danger after the lapse of a few hours only, without having ever experienced any crisis, any evacuation, or indeed any other obvious change but the rapid and progressive amelioration of all the symptoms. In such cases the stethoscope at once accounts for the sudden improvement, by exhibiting to us all the signs of the resolution of the inflammation. These striking results may be obtained at any stage of the disease, even after a great portion of the lung has undergone the purulent infiltration. As soon as we have obtained some amelioration, although but slight, we may be assured that the continuation of the remedy will effect complete resolution of the disease, without any fresh relapse; and it is in regard to this point more particularly that the greatest practical difference between the emetic tartar and blood-letting consists. By the latter measure, we almost always obtain a diminution of the fever, of the oppression and the bloody expectoration, so as to leave both the patient and the attendants to believe that recovery is about to take place; after a few hours, however, the unfavorable symptoms return with fresh vigour; and the same scene is renewed, often five or six times, after as many successive venesections. On the other hand, I can state that I have never witnessed these renewed attacks under the use of the tartar emetic. In these cases we observe only, in the progress towards convalescence, occasional stoppages. And this is more particularly the case in respect of the stethoscopic signs: as we find that, between the period when the patient experiences a return of his appetite and strength, and fancies himself quite cured, and the period at which the stethoscope ceases to give any indication of pulmonary engorgement, more time frequently elapses than between the invasion of the disease and the beginning of the convalescence. It is necessary to observe, however, that this remark is still more frequently applicable to the disease when treated by blood-letting; and, moreover, that the patients subjected to the antimonial method never experience the long and excessive debility which too often accompanies the convalescence of those who had been treated by repeated venesections.

"The best way of appreciating any particular mode of treatment is by its results. I am sorry to say that I only began last year to keep an exact account of the results of mine by the tartar emetic; but I can affirm that I have no recollection of death from acute pneumonia in any case where this medicine had been taken long enough for its effects to be experienced. I have only witnessed a few fatal terminations where the case was a slight peripneumony complicated with severe pleurisy. (We shall find, when we come to treat of the latter disease, that, after the first stage, the emetic tartar has little effect in it.) I have also lost some patients who, besides the pneumonia, were affected with cancer, phthisis, disease of the heart, &c.; and these are the cases where I had an opportunity of observing the different degrees of resolution in this disease. Finally, I have lost some who were brought to the hospital moribund, and who sunk before they had taken more than two or three grains of the remedy. In the year 1824, at the clinic of the Faculty of Medicine, I treated by the tartar emetic twenty-eight cases of pneumonia, either simple or complicated with slight pleuritic effusion. Most of these cases were very severe, yet they were all cured, with the single exception of a cachectic old man of seventy, who took but little of the medicine, because he bore it badly. During the present year (1825) I have treated thirty-four cases in the same manner. Of these, five died; but of this number two women, one aged fifty-nine and the other sixty-nine, were brought to the hospital moribund, and sunk before they had taken more than two or three doses of the emetic tartar; a third died of disease of the heart when convalescent from the pneumonia; and a fourth fell a victim to chronic pleurisy, also in the period of resolution of a sub-acute peripnuemony. These two last cases will be detailed hereafter; the one at the end of the present chapter, the other in the section on Pleuro-pneumonia. The fifth case was that of a man, seventy-two years of age, who died of cerebral congestion on the tenth day of the disease. Of these fives cases, then, the two first cannot be adduced in either way as instances of the effect of this remedy; and the two next are proofs of its efficacy in pneumonia, rather than the contrary. The result, therefore, of the whole is, that of fifty-seven cases of pneumonia treated by the tartar emetic, only two individuals, both upwards of seventy, died of this disease conjoined with cerebral congestion; that is, a little less than one in twenty-eight."—*Lon. Med. Phys. Jour.*

Sir H. Halford on Tic Douloureux.—May I venture to throw out an opinion, founded on the observations with which my experience has furnished me, that the disease is connected with some preternatural growth of bone, or a deposition of bone in a part of the animal economy where it is not usually found in a sound and healthy condition of it, or with a diseased bone?

The following cases have occurred to me, and seem to give a degree of probability to this surmise; and I throw it out for the consideration of the

profession, in order that a number of facts may be collected, from which a safe inference at length can be drawn.

A lady, forty years of age, suffered under the violent form of tic douloureux, at Brighton, notwithstanding the careful attention and skill of a very judicious physician there. On returning to town, it was observed that the rending spasms, by which the disease is marked, were frequently preceded by an uneasiness in one particular tooth, which exhibited, however, no signs of unsoundness; but the constancy of this symptom was enough to justify the extraction of the tooth in this instance, (though the failure of this expedient to afford relief in general does not encourage recourse to the operation,) and, on its being drawn, a large exostosis was observed at the root of the tooth, and the lady never suffered more than very slight attacks, and those very seldom, afterwards.

The D. of G. was attended by Dr. Baillie and myself, for six weeks, under this disease, in its most marked and painful form, without deriving benefit from our prescriptions. At length we thought it best to advise him to repair to the sea-coast, in hopes of renovating the shattered system by taking bark there. After he had sojourned a month by the sea-side, a portion of bone exfoliated from the antrum highmorianum, and the D. recovered immediately and has never suffered the disease since. The bone had been hurt, probably, by a fall from his horse, which the D. had met with some months before.

The late Earl of C. underwent martyrdom by this disease, and excited the warmest sympathy of his friends by the agonies he sustained for many years. He submitted to the operation for the division of several branches of the fifth pair of nerves repeatedly, by Sir Everard Home, and by Mr. Charles Bell, without obtaining more than mere temporary relief. At length he was seized by apoplexy, and lay insensible for some days, and in great peril from the attack, but finally recovered. After the apoplexy, the paroxysms of the tic douloureux became less frequent and less severe, and were administered so satisfactorily by an ingenious physician, who wrote his inaugural exercise on the disease. For the last year or two of his life, his lordship had ceased to suffer from the tic, and died at an advanced age, without any marked malady. His head was not examined after death, and therefore we are left to conjecture only what might have been the immediate cause of his former sufferings. Whilst I attended him, he underwent repeated exfoliations of the alveolar processes of the teeth, which I thought occasioned his torment; and, to account for the cessation of the complaint, I suppose that these efforts to throw off diseased portions of bone might have ceased, or that the apoplexy had disqualified the nerves for suffering so exquisitely; but there might have been besides, as some later instances have made probable, disease in the bones of the head.

The late Dr. P. fell a sacrifice to this dreadful disease, after sustaining its tortures for some years, with a constancy which attracted all our pity and esteem, and died at last under apoplexy. No assistance which the experience of any of us could afford him gave him relief, or controlled the violence

of his attacks. On examining his head after death, there was found an unusual thickness of the os frontis, where it had been sawn through above the frontal sinuses, and at its juncture with the parietal bones. There was discovered also on the falciform process of the dura mater, at a little distance from the crista galli, a small osseous substance about three-eighths of an inch in length, rather less in breadth, and about a line in thickness. The vessels of the pia mater were turgid with blood, and about an ounce of fluid occupied the ventricles. I lamented that the frontal sinuses had not been examined; for I remember he replied to a question which I once put to him, as to his ever having experienced any suppuration within any bony cavity, that he had twice suffered suppuration in the frontal sinuses. Dr. P. had submitted, with great patience, to a division of several branches of the fifth pair of nerves, under the judicious operation of Sir A. Cooper, who, on my mentioning to him the notion I entertained of the cause of tic douloureux, was so obliging as to show me the skull of a person who had died of this disease in the country. The internal surface of the frontal bone is a perfect rock-work.—*Medical Gazette.*

MEDICAL JURISPRUDENCE.

IMPUTATION OF POISONING.—*Detection of a conspiracy, by the inconsistence of the evidence for the prosecution, with the chemical analysis and with the effects of poison on the system.*

CASE I.—Samuel Whalley was indicted at the York spring assizes, in 1821, for maliciously administering poison to Martha King, a dress maker, with whom he cohabited, and who was pregnant by him. The indictment contained three charges:—a charge of administering poison for the purpose of killing the woman; another of administering it for the purpose of destroying the living child in her womb; and a third of administering it for the purpose of procuring abortion, the child not being quick.

The moral evidence against the prisoner was derived almost entirely from the testimony of the prosecutrix King, and that of another woman Merryweather, who lodged in the same house with her. Its purport was, that the prisoner had under promise of marriage, cohabited with King, who became with child in consequence; that the marriage was put off, after proclamation of banns, on the ground of its being inconvenient at the time to the prisoner;—that, on two occasions after this, and recently before she was poisoned, he tried to prevail on her to take drugs for the purpose of destroying the child, and maltreated her because she refused;—that she had a dream about purchasing poisoned tarts, and that a fortnight afterwards the prisoner brought her several tarts, which while he declined partaking of them himself, he urged her to eat, "because he should like young Samuel (the fœtus in utero,) to have one;"—that she did not take any that day, but ate some the following afternoon;—that after she had eaten them, and was taken ill, the prisoner paid her a visit, and in quitting

her made a remark which implied he thought her dying, and knew she had taken something deleterious.

The prisoner on the other hand, while he admitted the cohabiting, the promise of marriage, and even that a day had been fixed for it, stated that it was broken off in consequence of his having caught her in a suspicious situation with another man;—that she frequently threatened his life on account of his refusing to make good his promise to marry her;—that he carried the tarts to her, because she asked for them on account of a curious dream she had about tarts;—and he proved, by two witnesses, that she had arsenic in her possession, although in her evidence she denied she ever had any, or knew what it was. The defence was therefore grounded on a charge of conspiracy on the part of King and Merryweather.

The medical evidence was to the following effect:

According to the deposition of King,corroborated in many points by that of Merryweather, she felt an "unpleasant coppery taste" while eating the first tart, and this was so much increased while she was eating a second, that she did not take the whole of it. Half an hour afterwards she became sick, felt a burning heat and pain in the stomach, was seized with trembling and feebleness of the limbs, and subsequently had some vomiting. Her fears being in consequence excited, she sent for Mrs. Merryweather, and along with her examined two tarts which remained, and they found a white powder hidden under the preserves. They both became alarmed, and Merryweather immediately set off in quest of a medical man. But it appeared that, notwithstanding her state of alarm, the messenger went to a gentleman who lived a mile off, who had never attended King before, and to whose house she did not know the way. Mr. Thackrah, surgeon at Leeds, who was the gentleman called, arrived at Mrs. King's house about six in the evening, two hours nearly after she had taken the tarts. He found her agitated, and complaining of the symptoms mentioned above; but "the pulse was not much accelerated, the tongue exhibited nothing particular; she did not complain of urgent thirst, or sense of heat in the mouth or throat; nor did she seem to have acute pain." As she told him she had not vomited, he immediately administered an emetic, and soon afterwards another, as the first did not operate. She then vomited. The matter discharged was preserved in a wash-hand basin, and taken home that evening by one of his pupils who had accompanied him; but Mr. Thackrah admitted that the prosecutrix might have introduced a small quantity of poison into the basin before she vomited.

He left her about seven, and sent his assistant to see her at ten. Meanwhile she had according to her own account, another attack of vomiting, the matter of which she preserved, and showed to Mr. Thackrah at his visit next day; but she did not speak of it that evening to the assistant. This stuff was not taken away for some days, as Mr. Thackrah did not happen to have any convenient vessel with him at his second visit. On this occasion he found her complaining of headache and pain in the bowels, and the tongue was furred; but she had no particular illness that was

apparent, nor was there subsequently any of those effects which are usually caused by small doses of arsenic. After a few days' attendance, deeming her well, he discontinued his visits. She, as well as Merryweather, however, stated at the trial that she had been obliged to keep her bed several days, and that she had never been well afterwards.

The chemical analysis of the various suspected articles was conducted partly by Mr. Thackrah, partly by Mr. Walker, a chemist of Leeds.

In the two tarts, which were delivered to Mr. Thackrah, at his request, on his first visit, they found under the preserves a white powder, which proved to be arsenic. Mr. Thackrah remarked that, when a portion of the powder, with a little of preserve adhering to it, was dissolved in distilled water, and alkalised with subcarbonate of potass, the sulphate of copper caused a green, and the nitrate of silver a yellow, precipitate; and Mr. Walker determined the quantity in each tart to be between four and five grains.

Mr. Walker likewise examined the matters of vomiting, and detected arsenic by the same test in both. The quantity in the first was exceedingly minute,—not above one grain dissolved in at least three pints of fluid. The second matters of vomiting contained a much larger quantity,—namely, between twelve and fifteen grains; and, from the observations Mr. Walker made, "he doubted very much whether the arsenic of this analysis had ever been in a human stomach."*

Such were the facts of this important case. The following are the conclusions which may be drawn from the medical evidence:—

In the first instance, Mr. Thackrah deposed on the trial that, although the illness of the prosecutrix was undoubtedly caused by something which had disordered her stomach, he did not think her situation corresponded with that of a person who had taken so much arsenic as was to be inferred from what was contained in the tarts analysed;—and that, if he had heard nothing about poison, he would not have supposed she had taken any. He admitted at the same time that he could not affirm positively, from the symptoms, that she had not taken a *minute* quantity of arsenic, as the symptoms of arsenical poisoning are subject to great variety.

In the second place, Mr. Walker deposed, in regard to the coppery taste said to have been felt by the prosecutrix while eating the tarts, that arsenic could not cause such a taste, because its taste "*is sweet*, not like copper; if mixed with sweet tart, it could not be perceived at all."

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* Mr. Walker having died since the trial, I have not been able to procure all the particulars of his experiments. The fact that arsenic has not been in the stomach may be ascertained by finding that the precipitates procured from the alleged matters of vomiting by the liquid tests, and more particularly by sulphuretted hydrogen, do not yield empyreuma, or exhale the odour of burning animal matter in the course of reduction.

Thirdly, according to the analysis of the powder in the tarts which were not eaten, the prosecutrix could not have taken above *ten* grains of arsenic in what she did eat. Now, even after repeated attacks of vomiting, the last matters discharged containing *at least twelve grains;* which clearly showed that arsenic had been mixed with the stuff after it was vomited,—if, indeed, there was vomiting at all. The same inference is deducible with still greater certainty from the comparison of the quantity contained in the last matters of vomiting with that contained in what was discharged a short time before when vomiting was encouraged by emetics and the free use of diluents; the latter quantity not being above *one* grain. The prosecutrix indeed stated that the matter from which the larger quantity was procured, had been discharged into the same basin as that from which the former matters of vomiting had been taken, and that a considerable white sediment had been left in the basin when Mr. Thackrah transferred the contents into another vessel. But Mr. Thackrah was sure that no perceptible sediment was left.

Fourthly, Mr. Thackrah deposed, that if so great a quantity had been taken as to render it possible for twelve or fifteen grains to be vomited two or three hours afterwards, it would have occasioned the most violent symptoms, and probably death.

It is impossible to conceive more pointed evidence. The medical investigations were alone amply sufficient to decide the nature of the case.

The prisoner, as will be readily anticipated, was found Not guilty. It may be satisfactory to add, that the prosecutrix King and the witness Merryweather were immediately committed on a charge of conspiracy. But the judge, considering the unfortunate state into which one of them had been brought by Whalley's means, and that they had signed a paper to the effect that all the charges made against him were false, and the result of a conspiracy against him, acceded to Whalley's request to allow them to be discharged.—*London Med. and Phys. Journ.*

Period of Parturition in Women.—Dr. Samuel Merriman has laid before the Medico-Chirurgical Society of London, the result of some observations made by him on this subject. They are founded on the following data. "When I have been requested to calculate the time at which the accession of labour might be expected, I have been very exact in ascertaining the last day on which any appearance of the catamenia was distinguishable, and have reckoned forty weeks from this day, assuming that the *two hundred and eightieth* was to be considered as the legitimate day of parturition. The subjoined table shows how often this day was deviated from in the cases of 114 mature children."

In the 37th week, (255, 256, 259 days respectively,) - - -	3
38th week, (from 262 to 266 days,) - - - -	13
39th week, (from 267 to 273 days,) - - - -	14

In the 40th week, (from 274 to 280 days,) - - - -	33
41st week, (from 281 to 287 days,) - - - -	22
42d week, (from 288 to 293 days,) - - - -	15
43d week, (from 295 to 301 days,) - - - -	10
44th week, (303, 305 and to 306 days,) - - -	4
	114

These are all calculated from, but do not include, the day on which the catamenia were last distinguishable. Dr. Merriman deems it safe to infer, from this table, that conception is effected soon after the catamenial period has intermitted more commonly than immediately before the recurrence of that discharge. He adds some cases in which pregnancy was apparently protracted beyond the longest of the above periods.

Medico-Chirurg. Transactions.

TOXICOLOGY.

Case of Death caused by the external application of Opium. (*Journal de Chimie Medicale, Avril* 1827.)—The application of opium in considerable quantity to the skin when deprived of its cuticle, is a practice by no means free from danger; and when it is resorted to for allaying irritation, it is necessary to watch the patient carefully. We are acquainted with an instance in which deep coma was induced by the application of an opium poultice to the scrotum previously deprived of the cuticle by a blister, and which would in all likelihood have proved fatal, had not one of the patient's friends called accidentally to see him and discovered the cause of his state of sopor. The following is an example of death originating in the same source, although the skin was not deprived of its cuticle. A soldier, thirty-two years of age, was attacked with phlegmonous erysipelas of the fore and outer part of the right leg, on account of which a linseed poultice, moistened with *fifteen drops* of laudanum, was ordered to be applied to the limb. Next morning he was found in a state of deep sopor, with the face pale, the eyelids tremulous and half open, the pupils contracted, the lips distorted, the muscles of the face affected with spasm, and those of the limbs with convulsions. The surgeon having remarked a strong odour of opium, as well as a yellow coloration of the bandage which enveloped the limb, he had it removed, and found not only the bandage but all the compresses soaked with laudanum, which was flowing copiously from the poultice. The attendant whose duty it was to make up the poultice, had left it in charge to an hospital servant, without telling him what quantity of laudanum was to be used; and the latter had ignorantly used towards an ounce. Antispasmodics, emetics, and sinapisms, were resorted to, but in vain. The convulsions increased, the pulse became more and more feeble, and the patient died. On inspection some red points were seen on the arachnoid, a strong opiate odour was exhaled from all parts, and the heart, stomach,

and brain were in their healthy state. In the blood-vessels no trace could be found of the poison which had been absorbed.—*Edin. Med. Surg. Journ.*

Cases of Poisoning with Belladonna. (Journal de Chimie Medicale, Decembre 1827.)—Two children ate a considerable quantity of the berries of the Atropa Belladonna. The elder of the two on going to school immediately afterwards, burst out into immoderate and incontrollable fits of laughter, and constantly caught at objects which he conceived were before him. Subsequently was added to these symptoms an incessant, incoherent babble, with continual agitation of the body, fixed eyes, dilated and insensible pupils. This was above three hours after the berries had been taken. The physician who then saw him for the first time administered an emetic, which brought away a large quantity of reddish matter containing fragments of the herries. After this tartar emetic was given, though not without great difficulty, as the lower jaw was spasmodically contracted. Notwithstanding repeated vomiting, the symptoms went on increasing, the limbs were in constant agitation, the breathing high and croupy, the face red, and the incoherence constant. Purgatives were then administered, and afterwards vinegar. Four hours after the poison was swallowed the breathing had become stertorous, the skin cold, the face bloated, the pulse imperceptible. The child was then immersed in the warm bath and bled from the jugular vein to the extent of six ounces, with marked advantage. The muscular agitation was now broken by intermissions of profound sleep, in which, however, the patient was not permitted to indulge for twelve hours more. Next morning (nineteen hours) calomel was administered and caused several evacuations. In the afternoon the pulse again became almost imperceptible, the skin cold and pallid; and the warm-bath was therefore repeated and followed up by sinapisms and assafœtida injections, in consequence of which the pulse and temperature were restored, Four hours afterwards these symptoms recurred and were again successfully combated by the same means. An hour and a half after that, or 29½ hours after the berries were eat, the whole symptoms were much abated, and the child was sensible. From this time the amendment was rapid. But it was not till the third day that he could distinguish objects. Till then he was entirely deprived of sight: even a lighted candle held close to the eyes, did not seem to make the slightest impression on the retina. For some time afterwards he was in indifferent health, and had occasional fits of slight convulsions; but he ultimately got quite well.—The circumstances of the other case were precisely the same in every respect.—*Ib.*

CHEMISTRY.

Solanic acid.—Some time since M. Desfosses announced the discovery of a distinct alkaline principle in the berries of the *Solanum nigrum, L.* to

which he gave the name of *Solanine.* It appears that M. Peschier has ascertained that this principle is combined with a peculiar acid, which he has denominated Solanic acid. If this should be confirmed by other chemists, it is to be hoped that some other name may be adopted either for the acid or alkali.—(*Edit. N. Y. M. & P. J.*)

According to M. Peschier this acid may be separated by means of Ammonia, which precipitates the vegeto-alkali. It has a crystalline form, is soluble in water, and produces crystallizable combinations with potash and soda; the first in acicular crystals, the second in quadrilateral prisms, with a sweet taste.—Solanic acid is without action upon the salts of lime, baryta, magnesia, iron, zinc, and copper; and only a feeble action upon those of lead, silver and mercury. This acid has been found also in other plants of the same genus, and may, therefore, be regarded as peculiar to the family.—*Bull. Univ.* c. xii. p. 287.

Purification of alcohol.—A prize was offered by the Royal Academy of Brussels to the person who should prove upon what the differences between alcohol, extracted from various substances, as fruits, grain, roots, sugar, &c. depended. This was obtained by Mr. Hensmans, who was led, by numerous experiments, to conclude that the alcohol was always identical, but that the difficulty, more or less great, always found in rectifying it, as well also as the difference in taste, depended upon the presence of a fatty matter, and a little acetic ether. The fatty matter, when alone, may be separated by several distillations, but the acetic ether is not removed in this way. It is better, in every case, for the removal of both, to add a little caustic potash, or soda to the alcohol, to be rectified. Carbonated alkali does not act with sufficient energy.—*Bull. Univ. E.* 8. 289.

On the caseous oxide and caseic acid of Proust.—The results obtained by Proust, relative to the substances produced by the fermentation of cheese, have been examined and described by M. Henri Bracannot. The substance which Proust distinguished as caseous oxide, he shows to have no claim to such a title, and proposes to call it *Aposepedine*, as being produced by putrefaction. It also appears to be produced in certain morbid diseases.

The properties which Proust has assigned to *caseic acid*, belong, according to M. Bracannot, to various contaminating substances, none of which have any title to be considered as a particular acid. The substances present are free acetic acid, aposepedine, animal matter soluble in water and insoluble in alcohol (ozmazome) fluid oil; a brown resin, acetate and muriate of potash, and traces of acetate of ammonia.

On examining the fatty matter of cheese, Bracannot found it to consist of margarate of lime with margaric and oleic acids; the butter having undergone the same kind of change during the fermentation of the cheese, as that produced when it is saponified by the action of alkalies or other bodies.—*Annales de Chimie*, 36, 159.

On testing the presence of Ammonia in a substance.—Having occasion to ascertain whether the action of a salifiable base upon a body containing azote, was simply that of evolving ammonia, previously existing, or that of forming ammonia by the combination, M. Plessin was induced to search for a base which would effect the former object, but not the latter. Potash, lime, magnesia, and many other bodies do both, but the hydrated oxide of lead answered the purpose very well. It gives no indication of ammonia when put into contact with azotated substances not containing that alkali; even urea is not affected by it; but being put in contact with an ammoniacal salt, ammonia was instantly evolved, and rendered evident by the visible fumes which arose upon the approximation of a little acetic acid.—*Annales de Chinie*, 36, 177.

OBSTETRICS.

Extra-uterine pregnancy, terminating in the discharge of the fœtus piecemeal by the anus.—(*Journal des Progres de Sciences T. premier*, 1827.)—A middle-aged woman, of a strong constitution, and well constructed pelvis, and who had previously had three children without any particular accident occurring, became pregnant for the fourth time towards the close of October 1825. Nothing unusual occurred till the thirty-third week, when she began to complain of violent pains in the lower belly, confined chiefly to the left and anterior part of the pelvis near the groin, and quite different from the pains she had experienced in her former pregnancies. As these pains went on increasing, an accoucheur was consulted, who found the neck of the uterus situated high up, hard, and half an inch in length. About a fortnight afterwards she was persuaded to consult a *sorceress*, who lived three leagues and a half off, and who gave her a violent cathartic. Its operation was so violent that she was for some time in a dangerous state; but she recovered, and then it appeared that the pains had ceased, as well as the movement of the fœtus, and that the milk, which had begun to flow a short time before she took the cathartic, had receded. She became eventually so well as to be able to work; but she continued to purge frequently, and the discharges were fœtid and bloody. About three weeks and a half after she took the cathartic, she discharged a mass of flesh in a state of putrefaction and adhering to the bones of the leg of a fœtus; and its escape was followed by a copious putrid evacuation. For fifteen days after she discharged successively portions of bones, along with fluid fœtid evacuations; and in the course of that time was reduced to a very low state by hectic fever. At last there appeared in the left side of the abdomen a tumour, which soon suppurated, and bursting, discharged a large quantity of fœtid pus. The stools then became less frequent and she gradually recovered, so that in September 1826, she was in excellent health, though feeble. The neck of the uterus was in its usual condition, and the abdomen flaccid and not tender to the touch.—*Edin. Med. and Surg. Jour.*

Case of Double Uterus, with Double Impregnation. (*Rust's Magazine, Vol.* 20, 568.)—An extraordinary case of this description has been related by Dr. Geiss, a physician of Traffurth near Erfurt. The woman had been in labour for two days, when he was requested to attend her. He found her a stout, healthy female, of middle stature. The labour-pains were confined to the right side. On the right side, the womb reached as high as the thorax; on the left it did not extend above the navel, and inclined forwards and laterally. The external parts and os uteri were properly constructed, and the shoulder of the child could be felt behind the membranes. The operation of turning was performed, and a healthy female infant delivered, upon which the right side of the abdomen sunk in while the left continued prominent. In an hour the labour-pains recurred, and on examining the state of the parts, Dr. Geiss found, that after passing the os uteri, the finger came in contact with a membrane distended by fluid, and protruding through an anular opening towards the left side, while the navel string of the child already delivered, extended upwards into a cavity like the uterus in ordinary circumstances. On further examination, he found the belly of a second child presenting at the accessory orifice, and therefore performed the operation of turning, and brought into the world a stout still-born male child, which was soon recuscitated. As no placenta followed for some time, he proceeded to assist the separation of them, and had then an opportunity of completely satisfying himself, that his patient had a double uterus. The right placenta came away first, and the right womb contracted vigorously; the left placenta followed, but the uterus of that side contracted slowly, and the woman therefore lost a good deal of blood. Two months afterwards the mother and both children were in good health. Two years before, she had brought forth a single child, and the labour was tedious, and required manual aid to accomplish.—*Ibid.*

MISCELLANEOUS.

Rate of Sickness. From returns made by upwards of seventy Friendly Societies, situated in sixteen different counties in Scotland, embracing periods of 3, 10, 20, 30, 40, and even 50 years, and comprising upwards of 100,000 members, the following schedule has been deduced:

Average Sickness for every Individual in each year.

Age.	Weeks.	Days.	Hours.	Proportion of sick members.
Under 20	0	2	16	1 in 13695
20—30	0	4	3	1 in 8789
30—40	0	4	19	1 in 7574
40—50	1	0	4	1 in 5061
50—60	1	6	3	1 in 2765
60—70	5	4	10	1 in 923
Above 70	16	3	19	1 in 314

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40—50 - - -	1	0	4 - -	1 in 5061
50—60 - - -	1	6	3 - -	1 in 2765
60—70 - - -	5	4	10 - -	1 in 923
Above 70 - -	16	3	19 - -	1 in 3.14

This table was prepared by a committee of the Highland Society of Scotland, to whom the returns were made. It will be observed that the proportion of sickness is much smaller than that in the British army, as heretofore given. The reasons of this are very manifest.

Edinburgh New Philosophical Journal.

Quackery.—In these days of quackery and puffing, the following anecdotes may afford some amusement, and at least show that the empirics of the present day are genuine descendants of the old stock:

Dr. Rock and Dr. Franks were two famous quacks in London about 1759 and 1760. Dr. Frank's handbill contained this admonition: "Be not *Rocked* into eternity by that vain and impudent pretender, Dumpling Dick, who still lives at the gate of an inn, where he was once porter." Dr. Rock's bill contains this sarcasm: "If you would avoid destruction, avoid the Old Bailey, for there lives an old soldier, discharged by the *beat of drum*, who has killed his thousands, but *not in battle;* his pills are more fatal than were his *bullets.*"

A contemporary of Rock lecturing once from his chariot, concerning a *Solar Pill*, said, "That it was the property of this inestimable and divine pill to stretch the line of existence to the longest possible extent, to counteract the operation of time upon the external form, to cheer, comfort, strengthen and renovate the internal system, to irradiate and gild the gloom of age, to diffuse a gleam of sunshine, even in the *hour of death.*" "I must stop here," said the learned doctor.

Rock one day lecturing on the efficacy of his pills for a certain disease, observed Hogarth and Hayman in the crowd, and probably fearing their satiric pencils, said, that "although professional honour prevented him from stating the cases he had cured, yet there were two gentlemen, whom he had no doubt would testify to the truth of what he advanced respecting the pills." They instantly made their way through the crowd, not however without some laughter at them.—*European Magazine.*

The Plague.—"I do not agree with Volney, on the subject of the plague, which, in Egypt, I have no doubt is indigenous. It originates in the stagnant waters left by the Nile, and all stagnant waters in hot climates produce disorders which have more or less resemblance to it. Is not this fact sufficient to prove that it rises in Egypt, *viz.* that when the inundation is great, the plague ensues; when it is small, the plague fails? Without intercourse with Egypt, they have no plague in Constantinople. Its progress is from the South."—*Otter's Life and Remains of Rev. E. D. Clarke.* Amer. edition, p. 335.

Method of recognising the stains caused by blood on steel instruments.—[*Journal des Progres des Sciences*, t. iv. 1827.] Professor Orfila has recently made some experiments on this subject with the view of illustrating certain questions in Medical Jurisprudence,—in which many doubts are entertained whether stains on steel instruments are caused by blood, by acid juices, or by rust; and the following are the criterions which he proposes. 1. When the instrument is heated to 80 or 90° F. the stain becomes brighter if it is caused by blood, but is not altered if it is caused by rust or lemon juice. 2. A drop of hydrochloric does not alter a blood-stain, but dissolves rust or acid stains. 3. The blood-stain steeped in water parts with its colouring matter to that fluid, and the red colour is retained on filtration, while stains caused by rusting or by vegetable acids either do not tinge water at all, or, if they cause a reddish-brown muddiness, it is removed by filtration. 4. The colouring matter derived from the blood stain may likewise be recognised unequivocally by its chemical properties, and in particular by the effect of chlorine: A minute quantity of chlorine turns it green, a larger quantity decolorizes it altogether, and an infusion of galls added to the decolorized solution causes a dark-red precipitate, which is the colouring matter in union probably with tannin. 5. Strong nitric acid destroys the colour of the stain caused by blood; the diluted acid dissolves it, forming a red solution, which precipitates red with infusion of galls.

UNIVERSITY REGISTER.

Historical account of the Medical Department of the University of New-York.

[Continued from p. 159.]

3. In the Annual Reports for 1793, 1794, 1795, and 1796, no mention is made of the number of students attending the medical lectures, although the gross number attending both departments is sometimes given. Subsequently the following are stated:

In 1796–7,	(about) 30 students.
1797–8,	29
1798–9,	22
1799–1800,	19
1800–1,	35
1801–2,	50
1802–3,	40
1803–4,	35
1804–5,	48

1805–6,	60
1806–7,	55
1807–8,	43
1808–9,	50*

The graduates of this school, according to the catalogue already referred to, were the following. We have added the subject of their inaugural dissertations whenever we were able to ascertain them.

1793.

Samuel Borrowe, *Cynanche Trachealis.*
John B. Hicks.
Jotham Post, *Against the Existence of Muscular fibres in the vessels.*
Willet Taylor, Jun. *Scarlatina Anginosa.*
Joseph Young.

1794.

David G. Abeel, *Dysentery.*
Peter Irving, *Influenza.*
Henry Mead, *Cholera Morbus.*

1795.

Peter Anderson, *Diarrhœa Infantum.*
William M. Ross, *Carbon.*
Timothy F. Wetmore, *Puerperal Fever.*

1796.

Alexander Anderson, *Chronic Mania.*
Winthrop Saltonstall, *Chemical and Medical History of Azote.*

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* In a pamphlet, entitled, "*Observations on the Establishment of the College of Physicians and Surgeons in the City of New-York,*" *&c. &c. New-York,* 1811, the following list is given as taken from the records of Columbia College. We only quote the years corresponding.

In 1796–7,	29
1797–8,	29
1798–9,	34
1799–1800,	21
1800–1,	34
1801–2,	51
1802–3,	40
1803–4,	34
1804–5,	47
1805–6,	65
1806–7,	55
1807–8,	55
1808–9,	50
Total,	545
Total reported by the Regents,	516

1797.

William Bay, *Dysentery.*
Alexander Hosack, *Yellow Fever.*

1798.

Adolph C. Lent, *The Acid quality of Pestilential Vapours.*

1802.

Joseph Bayley, *Yellow Fever.*
Nicholas Quackenbos, *Dysentery.*
James V. Brower.
Richard L. Walker, *The perspirable fluids of the human body.*

1803.

Isaac Foster, *Dysentery.*
James R. Manly, *Yellow Fever.*
Samuel Scofield, *Vaccina.*

1804.

William Barrow, *Lumbar Abscess.*
Ezekiel Ostrander, *Puerperal Fever.*
Daniel D. Waters, *Inflammation.*

1805.

Thomas Cock, *Respiration.*
Benjamin Kissam, *Fistulo in Ano.*

1806.

Valentine Mott, *Statice Limonium.*
William James Macneven, M.D. Vienna, *ad eundum.*

1807.

Allire R. Delile, *Pulmonary Consumption.*
William L. Lytton, *Dropsy.*

1810.

Robert Morrell, *Animal Heat.*
Samuel W. Moore, *White Oxide of Bismuth.*
Henry U. Onderdonk, *Stone in the Bladder.*

In 1806, the law establishing county medical societies, and also a state medical society was passed. The details of this act are given in an early volume of this Journal. The state society was organized in February 1807.

On the 3d of March 1807, the following entry appears on the minutes of the Regents :

" The memorial of the medical society of the county of New-York, praying an act of incorporation as a College of Physicians and Surgeons under the patronage of the Regents, was received and read, and referred to Dr. Linn, Mr. Jenkins, Mr. De Witt, Judge Spencer, and Mr. Rutgers."

Accompanying this was a communication to the Regents in the following words, from Dr. Nicholas Romayne.

" That your memorialist is president of the medical society of the

county of New-York, incorporated under the laws of the state, and that he is also appointed by said society their delegate and commissioner to the medical society of the state, and is otherwise charged by the resolutions of said society to pay due attention to the views of said society, so far as they respect the promotion of medical knowledge and the cultivation of the sciences relating to medicine. That the said society is, with the other medical societies of the state, directed by law to examine students of medicine, and to license such as may be qualified to practise as physicians and surgeons, or both. That the said society being impressed with the importance to the public that a system of medical education should be instituted under their inspection, have directed your memorialist to present to your honourable body in their behalf, their memorial respecting the same, to the end that by the aid of your honourable board the members of said society may be incorporated by the honourable the legislature, into a College of Physicians and Surgeons, under the direction, inspection, and patronage of the Regents of the University, and which memorial your memorialist has the honour to present herewith.

" That your memorialist is informed that the honourable the legislature of the state, have already invested your honourable board with all the powers to institute a college of physicians and surgeons, as is desired by the medical society of the county of New-York, and your memorialist therefore prays, in behalf of said society, and of each and every member thereof, that all the members of the said society, may be incorporated into a college of physicians and surgeons by the Regents, under their direction and patronage, with all such rights and privileges, as in the wisdom of said Regents may conduce to the promotion of medical knowledge and the public good.

" Your memorialist humbly begs leave to state to your honourable board, that under the ordinary circumstances of exercising the medical profession, it is difficult for any physician or surgeon in full practice, to be a medical teacher, as the branches of anatomy, chemistry, botany, and other branches of medicine require much preparation, study, and time. Your memorialist also begs leave to state, that every physician and surgeon in the ordinary practice of his profession, may be rendered more useful to the community by occasionally visiting a school of medical information, when combining an increase of knowledge, with the inspection of the duties of the teachers. Your memorialist therefore hopes, that the judicious arrangement of the honourable the legislature, investing the Regents of the University with the powers of appointing medical professors and the members of the college, of inspectors of the performance of their duties, a school of medicine may be established in the city of New-York, not only honourable to the state, but of national importance, and which may contribute to diffuse among mankind the blessings of science."

At the same time, a remonstrance against the proposed incorporation, signed by forty-nine members of the medical society of the county of New-York, was presented. It is as follows :

That your memorialists "view with extreme concern, a petition now presented, or about to be presented, to your honourable body from the society aforesaid, soliciting an act of incorporation as a college of physicians; a measure which they conceive to be not only altogether useless and unnecessary, but in every respect incompatible with the interest of the existing medical institutions of this state. They forbear to enter into a particular detail of the manner in which this petition passed their body, but they conceive it to be their bounden duty explicitly to declare, that although that petition appears as their official act, yet, that it cannot in justice be considered as the free interpretation of the wishes of the society, inasmuch as the said society was specially convened upon a subject totally irrelevant to the object of their present petition—advantage was taken of the small number of members collected, every necessary document (by previous arrangement) was prepared, and the object of the petition carefully concealed from a great portion of the members before they met. It was hastily passed through the society, without sufficient deliberation, contrary to the established usages of all incorporations, and is now made to appear before you, as their act, after mature consideration.

"They in an especial manner, remonstrate against the impropriety of unnecessarily creating more colleges, because a medical college, as part of the general establishment of Columbia College, has existed in this city for many years, where all the branches of medicine are faithfully and diligently taught by public professors. Your memorialists are informed that an understanding exists between the Regents of the University and the Trustees of Columbia College, that no additional medical school shall, at any time, be sanctioned by the Regents, while the duties annexed to the professorates of medicine in Columbia College are fulfilled.

"Your memorialists beg leave to remark, that this attempt to convert a county society into a college of physicians, would directly clash with the interests of the other county societies, and with the duties of the medical society of the state, and at all events, an attempt of this kind to change its name and character, at a moment when it is scarcely organized, would lead to endless mischief and confusion, while no possible good could arise out of it. They further remark, that this society does at present possess, in their opinion, every necessary power to license persons in the practice of physic and surgery, without interfering with the medical establishments of colleges and universities.

"Influenced by these considerations, which your memorialists deem all important, they confidently hope that the legislature of the state and the Regents of the University will see the evident impropriety (under existing circumstances) of creating a college of physicians and surgeons."

On the 10th of March 1807, the committee to whom the above memorial and remonstrance had been referred, reported "that they had met together and maturely considered, as well the application for the instituting by the Regents of the University a college of physicians and surgeons in

the city of New-York, as the remonstrance against the same, and they are unanimously of the opinion that by granting the prayer of the memorialists, medical science will be promoted; they therefore recommend, that a college of physicians and surgeons be established in the city of New-York, pursuant to the power vested in the Regents of the University, by the statute of the 24th of March 1791.

"Thereupon,

"Resolved, That the said report be accepted, and that the secretary prepare an instrument in writing for incorporating the said college by the name and description of '*the College of Physicians and Surgeons in the City of New-York.*'"

On the 12th of March, a draft of a charter was presented and agreed to, It is as follows:

"Whereas the Medical Society of the county of New-York have presented unto us their memorial, under the seal of the said society, testified by Archibald Bruce, secretary; stating that their efforts to contribute to the diffusion of science, and the improvement of the medical profession, would be more successful, if they were directed under the patronage of the Regents of the University of the state, and were incorporated as a College of Physicians and Surgeons, and praying us to favour the views of the said society, so far as they are connected with the public good, and with which the improvement of the medical profession is intimately connected, and that the said society may be incorporated as a college of physicians and surgeons, under our patronage.

"And whereas Nicholas Romayne, president of the said medical society of the said county of New-York, has also presented unto us his memorial in writing, stating that the said medical society is directed by law to examine students of medicine, and to grant licenses to such as are properly qualified to practise physic or surgery, or both;—that the said society are impressed with the importance to the public, that a system of medical education should be instituted under their inspection, and praying us, in behalf of the said medical society of the county of New-York, and of each and every member thereof, that all the members of the medical society of the county of New-York might be incorporated by us into a college of physicians and surgeons, under our direction and patronage, with all such rights and privileges as might conduce to the promotion of medical knowledge and the public good: And we having taken the said memorials into our consideration, and being satisfied that a college of physicians and surgeons, established in the city of New-York, for the sole purpose of promoting medical science, may be of public importance in diffusing the knowledge of the healing art:

"Be it therefore ordained by us, by virtue of the act entitled 'An act to enable the Regents of the University to establish a college of physicians and surgeons within this state,' passed the 24th day of March, 1791, and we do, by these presents, ordain, grant, and declare, That a *College of Physicians and Surgeons, for the promotion of medical science, and diffusing the knowledge of the healing art*, shall be, and is hereby established in

the city of New-York, in this state; and that Sir James Jay, James G. Graham, Alexander Sheldon, Samuel Latham Mitchill, William Livingston, Isaac Sergeant, Peter C. Adams, John Ely, Hugh Williamson, William M'Clelland, William Wheeler, Morris Willard, John Stearns, Philip Smith, Westel Willoughby, Caleb Sampson, Dunforth Shunway, Hugh Henderson, Gurdon Huntington, James Moore, John H. Frisbie, Barnabas Smith, Reuben Hart, Jesse Shepherd, Thomas B. Whitmarsh, David R. Arnell, Lyman Cook, John M. Mann, James Smith, Samuel Bard, Samuel Stringer, Hunloke Woodruff, Joseph White, Ebenezer Sage, Richard Udall, John Smith, Charles D. Cooper, Elias Willard, Jacob Outwater, Benjamin De Witt, Abraham Cornelison, David Hasbrouck, Charles Mitchill, Felix Pascalis, Samuel Torbert, Joshua E. R. Birch, John Riddel, George Anthon, John I. Coventry, Gardiner Jones, Philip Turner, Lewis Faugeres, Samuel Nesbit, John Onderdonk, William Moore, Nicholas Romayne, James Tillary, Archibald Bruce, Valentine Seaman, David Hosack, John R. B. Rogers, Wright Post, Edward Miller, William Hamersley, James S. Stringham, John H. Douglass, George W. Chapman, William James M'Nevin, John D. Jaques, Malachi Foot, Andrew Morton, John D. Gillespie, Alexander Hosack, Philip D. Kettletas, John Clark, Charles Buxton, Michael Degray, Daniel B. Cornelius, Joel Hart, Abraham Brower, John Wilson, Eloy Berger, Richard S. Kissam, Andrew Hunt, Benjamin Prince, Beekman Van Beuren, John Hicks, Joseph Bloodgood, Matthew Wendell, Samuel Bradhurst, John Stone, Baron A. De Carendeffez, George D. Clussman, Samuel Osborne, Benjamin Low, Joshua Secor, Benjamin Rockwell, Shadrack Ricketson, George C. Quackenbos, Robert Thorn, Abraham Losier, and all others who are now members of the medical society of the county of New-York, and all physicians and surgeons now resident in the county of New-York, and authorized by law to practise in their several professions, shall be the present trustees or members of the said college; and that the said trustees or members and their successors, shall be a body corporate and politic in fact, and in name, by the name of '*The College of Physicians and Surgeons in the City of New-York*,' and shall have perpetual succession, and by that name shall be in law capable to sue and be sued, to plead and be impleaded, to answer and be answered unto, to defend and be defended in all courts and places, and in all matters and causes whatsoever, and to purchase, take, hold, enjoy, and have, lands, messuages, tenements, hereditaments, and real estate, in fee simple, or for term of years, or lives, or in any other manner whatsoever; and also goods, chattels, books, monies, and all other things, of what nature soever; *Provided always*, that such estate, as well real as personal, which the said college is hereby authorized to hold, shall not exceed the sum of one hundred and fifty thousand dollars, current money of this state; and that the trustees or members of said college shall and may have a common seal, and may alter and renew the same at their pleasure.

"And it is hereby further ordained, granted, and declared, That the trustees or members of the college of physicians and surgeons hereby es-

tablished, shall and may meet together on the first Tuesday in May next, at twelve o'clock of that day, in the City-hall of the city of New-York, or at such other hour and place as may be directed by the Chancellor of the University, and shall then elect by ballot, a president, vice-president, register, treasurer, and thirteen censors, who shall hold their respective offices for one year, and until others shall be chosen in their places; and the first Tuesday in May shall be for ever after the day for the anniversary meeting of said college of physicians and surgeons, and on which day the president and other offices before enumerated shall be elected as aforesaid; and their quarterly meetings shall be on the first Tuesday in August, November, and February in every year; and that on the days of their anniversary meeting, and at their quarterly meetings, but at no other time, they the said trustees or members, may enact such by-laws, rules, and regulations, relative to the affairs, concerns, and property of said college, and relative to the duties of their president, vice-president, register, treasurer, censors, and other members, as they or a majority of the members of such annual or quarterly meetings may think fit and proper: *Provided* such by-laws, rules, and regulations be not contrary to, or inconsistent with the constitution and laws of this state, or the United States, or the ordinances made by us or our successors, Regents of the University of this state. And the register of the said college shall provide a book, in which he shall make an entry of all the resolutions and proceedings which may be had from time to time, and also the annual reports relative to the state of the treasury, and all such other things as a majority of the members of the college shall think proper, to which any member of the college may at any time have recourse; and the same, together with all books, papers, and records, which may be in the hands of the register, and be the property of the college, shall be delivered to his successor in office. And the treasurer of the said college shall receive and be accountable for all monies which shall come into his hands, and shall pay the same in such manner as may be directed by a majority of the members of said college convened at the anniversary or quarterly meetings, and by a warrant for that purpose, signed by the president or vice-president.

"And it is hereby further ordained and declared, That in case it should at any time happen that an election of the said officers should not be made on the day when, pursuant to this ordinance, it ought to have been done, the said corporation shall not for that cause be deemed to be dissolved, but it shall be lawful on any other day within three months thereafter to hold and make an election for the said officers, in such manner as shall have been regulated by the by-laws of the said corporation.

"And it is hereby further ordained, granted, and declared by us, That the said college of physicians and surgeons shall, as far as they are able, at all times, provide suitable apartments for all such professors as shall hereafter be nominated and appointed by us in and for said college, and which professors shall have the style and title of '*Professors of the University of the State of New-York for the College of Physicians and Sur-*

geons;" and that all the members of said college shall be privileged, from time to time, and all times, to attend, inspect, and notice all lectures, or other mode of teaching by the professors in said college appointed by us; and that, in case of death or resignation of any professor, or other vacancy in said college, a majority of the trustees or members of said college, at any of their meetings, may appoint lecturers in any branch of medicine, or of the sciences connected therewith, until such time as our pleasure be known respecting the same, or professors be appointed by us; and that it shall and may be lawful, at all times, for them the said trustees or members to appoint lecturers in said college, in any branch of science, for themselves, and for their own instruction.

"And it is further ordained, granted, and declared, That the president, vice-president, censors, and all others, the trustees or members of said college, shall carry and put into full effect, all our ordinances respecting the said college, as well with respect to education as all other matters and things, and shall pay due attention towards establishing and preserving for the said college an anatomical museum and chemical elaboratory and botanic garden, and shall make an annual report to us in writing, or to the Chancellor of the University, in the month of January in every year, respecting the funds and property of the said college, and all matters and things relative to said college, and the students and professors thereof.

"And it is further ordained, granted, and declared, That twenty-one trustees or members of the said college may form a board to do business at any of the anniversary, quarterly, or extraordinary meetings; and that the president, or in his absence, the vice-president of said college, shall appoint and direct a special or extraordinary meeting to be called of the trustees or members of said college, at any time or place he may think proper, provided application be made to him in writing for that purpose, signed by thirteen trustees or members, and the said meeting be previously advertised for six days in two of the newspapers printed in the city of New-York; and that at all the meetings of the college, in the absence of the president, or vice-president, the senior censor on the list of the college then present shall preside; and that the trustees or members of said college may, at any of their anniversary, quarterly, or extraordinary meetings, adjourn from day to day.

"And it is further ordained, granted, and declared, That the president, vice-president, trustees, or members of said college may, at any time, and at all times, recommend to us any person residing in the county of New-York, and lawfully authorized to practise physic and surgery, or any physician or surgeon, or person eminent for learning and talents, to be a trustee or member of said college of physicians and surgeons; and any physician and surgeon resident for two years in the county of New-York, being of good moral character, and authorized by law to practise in his profession, may apply to us to be nominated and appointed a trustee or member of said college; and that the said college may direct that the president of the said college grant appropriate diplomas, under the hand of the president

and seal of said college, testified by the register, certifying the name of every such trustee or member of the college.

"And be it further ordained and declared, That, reserving to ourselves and our successors, Regents of the University of this state, all powers to appoint professors in said college, and also all powers to appoint and displace any trustee or member of said college, now nominated and appointed by this charter, or hereafter to be appointed by us, or our successors; and also reserving all powers to confer degrees on any member, or trustee, or student of said college, which, in our opinion, and in the opinion of the president and other trustees and members of said college, may be worthy of any literary mark of distinction, in such manner as may be directed by us; and also reserving to ourselves and our successors, the right of appointing fellows and honorary members for said college, and also of making such further grants or ordinances as we and our successors may find necessary and useful for said college; and also reserving to ourselves and our successors the right to alter and modify this ordinance, establishing the said college, whenever we or our successors shall deem it necessary or expedient.

"We do finally ordain, grant, and declare, That the said trustees and members of the *College of Physicians and Surgeons in the City of New-York, and their successors, for ever*, shall enjoy all the corporate rights, privileges, and immunities which are hereby granted.

"In testimony whereof we have caused our common seal to be affixed to these presents the twelfth day of March, in the thirty-first year of the independence of the United States, and of our Lord one thousand eight hundred and seven.

"[L.S.A.] MORGAN LEWIS.

"By command of the Chancellor,

"FR. BLOODGOOD, Secretary."

[*To be continued.*]

UNIVERSITY OF THE STATE OF NEW-YORK.

College of Physicians and Surgeons,—May 20th, 1828.

Whereas the regents of the University have appointed the last Tuesday of October of each year, as a semi-annual commencement of the college of Physicians and Surgeons in this city, for the purpose of conferring the degree of Doctor of Medicine on such candidates as may be found qualified to receive it; notice is hereby given, that application must be made to the Registrar, by all who wish to become candidates for the degree of Doctor of Medicine at the October commencement, on or before the first Tuesday of September, that they may receive their several examinations before the Faculty of the College, which will meet for that purpose on the Tuesday following.

By order of the Board of Trustees,

N. H. DERING, M.D. *Registrar.*

QUARTERLY BIBLIOGRAPHICAL NOTICES.

1. *Medical Flora, or Manual of Medical Botany of the United States of North America.* By C. S. RAFINESQUE, A. M. P. H. D. &c. Vol. I. Phil. 1828. 12mo. pp. 288.

Review in our next.

2. *A Physiological Inquiry respecting the action of Moxa, and its utility in inveterate cases of Sciatica, Lumbago, Paraplegia, Epilepsy, and some other painful, paralytic, and spasmodic diseases of the nerves and muscles.* By WILLIAM WALLACE, M. R. I. H. &c. &c. &c. Dublin. 1827. 8vo. pp. 148.

The principal object of Mr. Wallace, in this volume, is to remove the prejudices which appear to him to subsist in Great Britain against an important external remedy in many severe diseases, the value of which has been attested by Larrey, Percy, Dupuytren, Pelletan, Richerand and Roux. With a similar view we now recommend his work to the general notice of American physicians, on whom the treatise of Larrey, republished in this country, does not seem, as far as we are informed, to have produced all the effect to which it was fairly entitled. The advantages enjoyed by Dr. Wallace, in obtaining experience, have been very great, and he has evidently not neglected them. For eight years he has been connected with the Dublin Infirmary for cutaneous and rheumatic diseases; and he has set a laudable example to medical men, of improving the opportunities which such a connection affords for cultivating our art, but which are, either from incapacity, or carelessness, or utter apathy, too frequently overlooked. In this as well as the volume on chlorine, noticed under the next head, Dr. Wallace displays no ordinary powers of observation and judgment, and the fact of his volumes having already become popular in his own country, is no slight evidence of the esteem in which he is held. It is only necessary for the profession in the United States to become acquainted with the labors of Dr. Wallace to appreciate them; and we would avail ourselves of this opportunity to impress upon the mind of every physician connected with a public institution, to imitate his example, and emulate his zeal in extending the boundaries of medical science.

3. *Researches respecting the medical powers of Chlorine Gas, particularly in diseases of the Liver; with an appendix, containing a description of the apparatus used for its administration, illustrated by plates.* By WILLIAM WALLACE, &c. Second Edition. London. 8vo. pp. 156.

In a very unassuming, but strictly philosophical manner, Dr. Wallace

has exposed in this volume the advantages to be derived from the proper application of this gas, in a numerous class of diseases which are frequently occurring in practice, and not seldom perplexing the physician who relies exclusively on the aid of mercury in their treatment. The Nitro-muriatic acid bath was for a long time used as the dernier resort in such cases, on the recommendation of Dr. Scott of India. It was however found so uncertain in its effects, that it was soon abandoned, and is now sparingly used. Some casual events having called the attention of Dr. W. to this remedy, he sought to ascertain the proper method by which its remedial agency might be permanently secured and rendered uniform. In his researches he was chiefly guided by the true spirit of inductive reasoning, and the result has been the present volume. In the first part the author discusses the important subject of medicines which act on the skin, and through this on the internal organs of the body. He establishes the fact, that these remedies exercise a much more efficient influence on these last, when exhibited in a gaseous form, and after the external organ has been exposed for some time to the action of increased heat, by which its absorbent powers are excited to increased action. Our author next turns his attention to diseases of the Liver, which he considers as occurring more frequently, and more frequently complicated with, and aggravating other diseases than was formerly imagined. He then relates cases in elucidation of his views, all of which are interesting, and deserve attention. In the third part Dr. Wallace considers the general agency of chlorine, and the best mode of employing it. Its immediate action appears to be exerted on the skin, causing a stinging sensation, followed by itching and smarting, and an increase of perspiration. The most important effect is a rash, or eruption of very small papulæ over every part of the body, especially on the back, breast, abdomen, and extremities. This is always to be regarded as a favourable event. The mucous membranes generally partake of this action, and it is extended to almost all the important functions of the body. We would be pleased to see the remedy extensively tried in this country, by intelligent and liberal physicians. The attempts of empirics, or those associated with empirics, are not likely to prove serviceable to the cause either of science or of humanity. The same industry and ability are displayed by Mr. W. in this, as in the preceding work.

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4. *The Glasgow Medical Journal.* Edited by WILLIAM MACKENZIE, Andersonian, Professor of Anatomy and Surgery, and Surgeon to the Glasgow eye Infirmary. Febuary 1828. Vol. I. No. 1. Glasgow. In exchange.

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5. *Litterarische Annalen der gesammten Heilkunde heraugegeben* von Dr. J. F. C. HECKER, Professor, &c. 6 Nos. from July 1827, to July 1828. In exchange.

6. *An essay, pharmacological and therapeutical, on Sanguinaria Canadensis, with a plate.* By WILLIAM TULLY, M.D. of Albany. New-York, 1828. 8vo. pp. 92.

Review in our next.

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7. *An Address pronounced before the medical graduates of the University of Maryland.* April 7th, 1828. By N. R. SMITH, M.D. &c. Professor of Surgery. Baltimore, 1828. 8vo. pp. 24.

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8. *The Boston Medical and Surgical Journal.* 5 Nos. from No. 14 to 18. In exchange.

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9. *The Western Journal of the Medical and Physical Sciences.* Edited by DANIEL DRAKE, M.D. No. 2

In exchange. The first number of this Journal has never reached us.

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10. *Disputatio Medica Inauguralis de Tuberculorum origine et progressu, &c. pro gradu doctoris Edinb.* GULIELMO S. SCOTT, Auctore. Edinburgi, 1827. 8vo. pp. 21.

From the author. We have read with much satisfaction this very creditable production of our countryman and fellow-citizen Dr. Scott.

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11. *Annals of the Lyceum of Natural History of New-York.* Vol. 3. Nos. 1 and 2. For April 1828.

These numbers are occupied with a very valuable paper from Dr. THOMAS THOMSON, of Glasgow, on the chemical examination of a number of American minerals.

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12. *American Medical Recorder.* No 42. In exchange.

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13. *The Western Medical and Physical Journal.* No 12. In exchange.

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14. *A Manual of Operative Midwifery, translated from the French of* Dr. JULIS HATIN, *Professor attached to the faculty of Medicine of Paris.* By RICHARD TUITE, M.D. of New-York.

Under the form of a Manual, this work embraces the whole system of practical obstetrics. While the author has been careful to exhibit all those facts, from which the principles of the science are deduced, and upon which the precepts of art rest, as the evidence of their utility, he has been equally solicitous to exclude every thing like irrelevant matter, which could only tend uselessly to complicate the subject, and divert the attention of the student. The author first treats of what may be called obstetrical anatomy; he then details with clearness and precision, the whole operation of natural labours; hence he deduces the principles of the science of midwifery; on principle he builds precept; he then teaches the applica-

tion of precepts, by describing in detail the whole manual exercise necessary to fulfil the indications of every case of unnatural, or preternatural labour. To teach an easy and skilful method of operating is the object of the author: its acquisition forms the skilful midwife, in contradistinction to the mere scientific speculator. The method of the whole work is most simple, and its style concise and perspicuous. While it is calculated to prove a useful pocket companion for the practitioner, it is also designed as a guide to the student, who is ambitious of attaining a practical knowledge of the obstetric art. This work will be republished in this city.

The honorary degree of Doctor in Medicine has recently been conferred upon Dr. Henry Bowen, of Myerstown, Pennsylvania, by the Alleghany College.

OBITUARY.

Died on the 14th of June, in the 63d year of his age, Wright Post, M.D. late Professor of Anatomy, and President of the College of Physicians and Surgeons of New-York.

In the death of this truly eminent physician, a loss of no ordinary character has been sustained. For the last twenty years he was the undisputed head of the profession in this city, and his death has left a breach which will not soon or easily be filled. Of the means by which so enviable a distinction was gained, it is not our purpose at present to speak. They are fit subjects for future eulogium, and will be duly noticed, when his character comes to be delineated for the emulation and imitation of those who survive. Deeply sensible of their loss, the Medical Society of this city have assigned to Professor John Augustine Smith, the task of commemorating the private virtues and public services of their deceased associate.